

The MINING CONGRESS JOURNAL

Volume 9

OCTOBER, 1923

Number 10



A Two-fold Problem

Builders of the Joy Mechanical Mine Car Loader believe that any successful loader must combine two operations; the actual recovery of coal from the mine floor and the rapid loading of this coal into mine cars. The Joy Loader is admirably designed and equipped to accomplish these two operations successfully and economically.

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And this is true the world around—AERO BRAND has established the bed-rock basis of low cost cyaniding. Its metallurgical efficiency meets every requirement.

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THE MINING CONGRESS JOURNAL

OCTOBER, 1923

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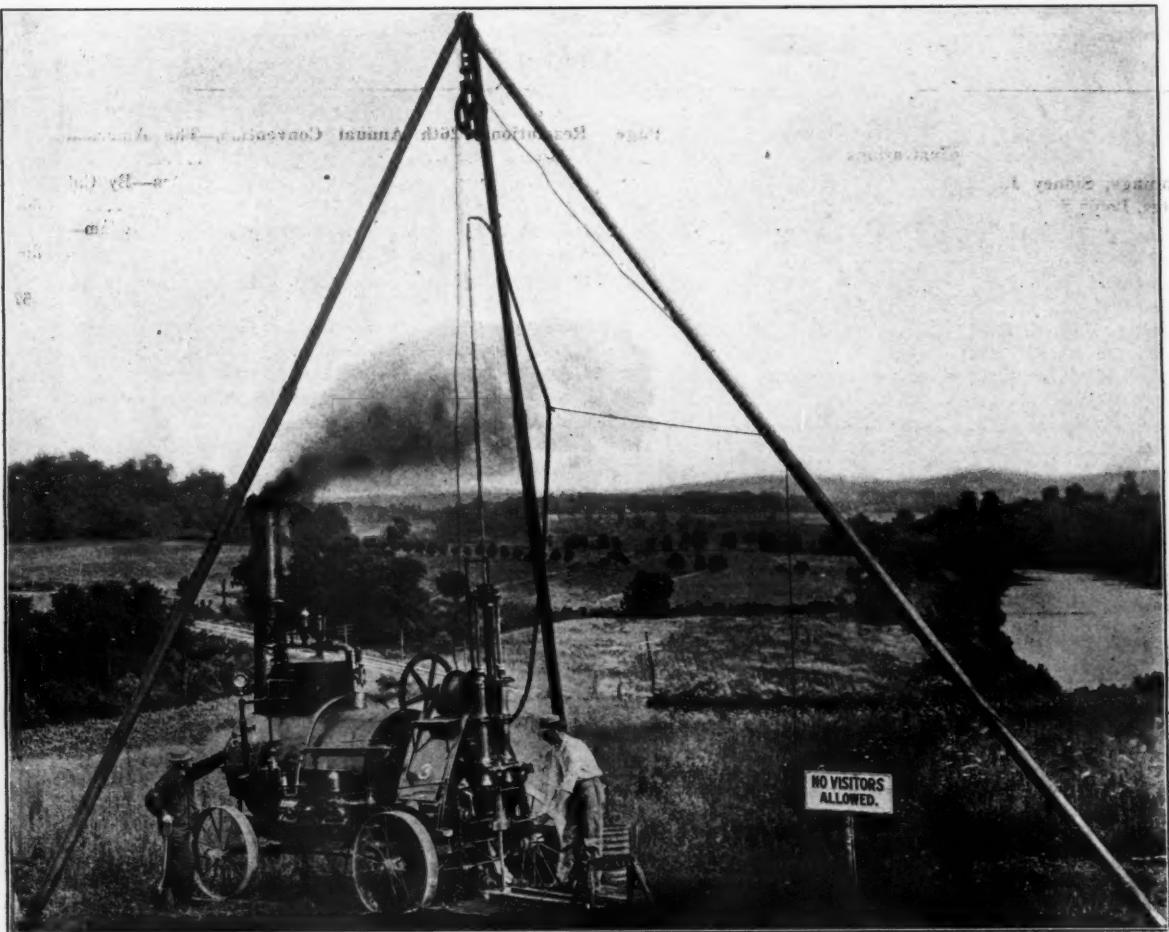
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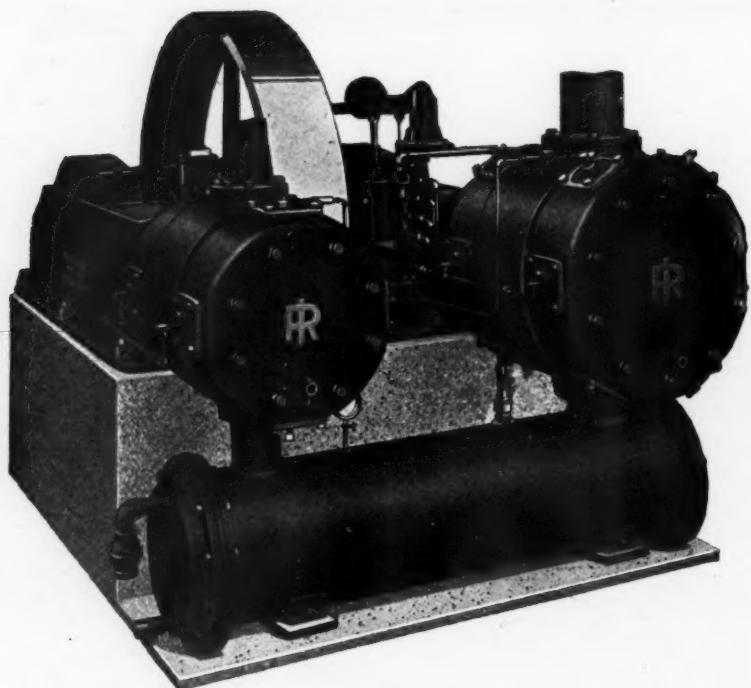
If some of your planing and boring tools require an unusual amount of grinding and replacement, it may be that there are sand and slag on the surface of some of the castings now used. Tools are keen inspectors of castings and originate many of the orders that come to Sivyer from more than a thousand miles away. If your usual sources of supply seem unable to get rid of the trouble, send us your blue prints of the parts in question, together with details about your difficulties. Without obligation on your part we will study the problems of molding practice involved and suggest methods for producing castings with uniformly good machining quality.

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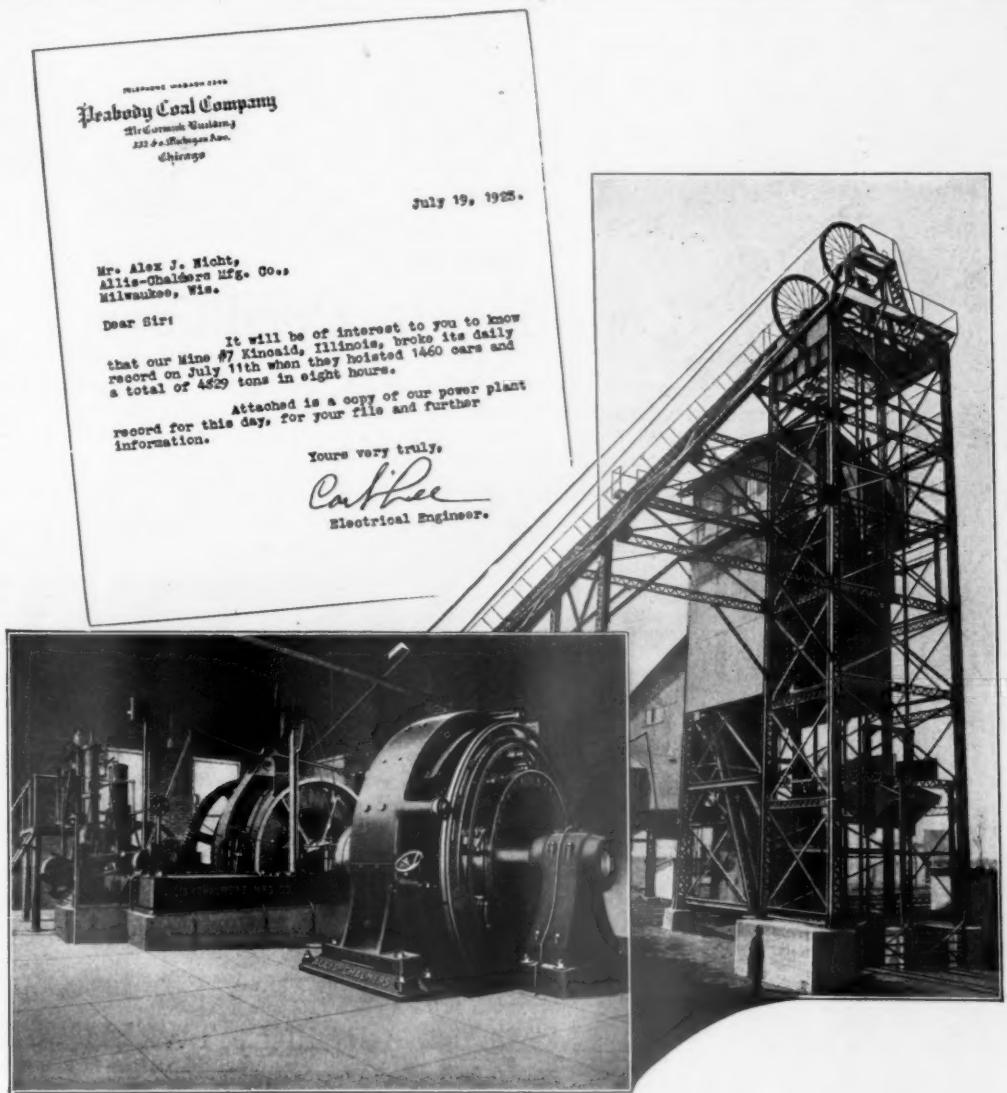
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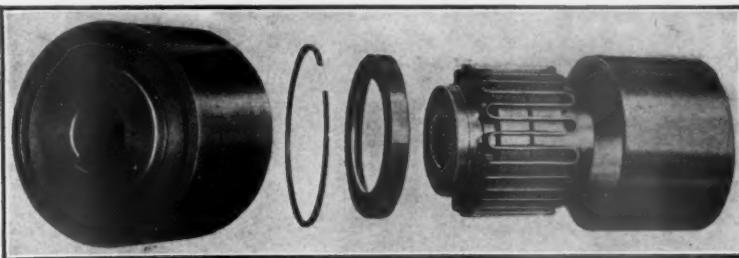
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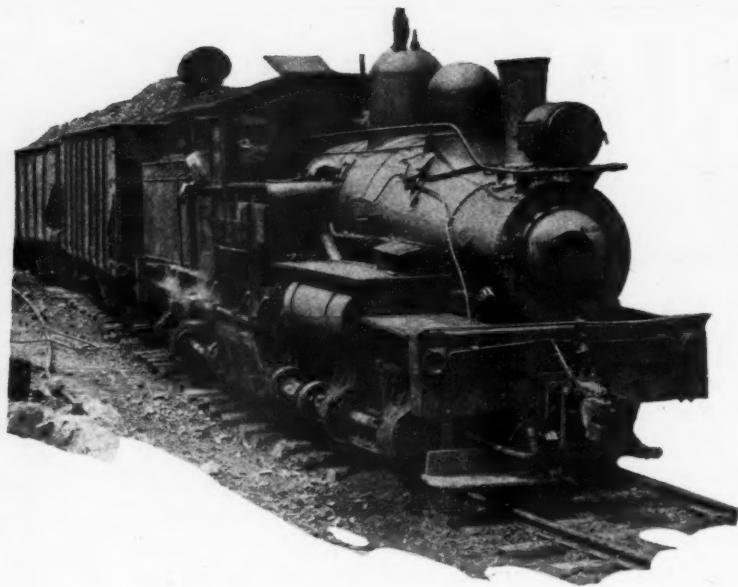
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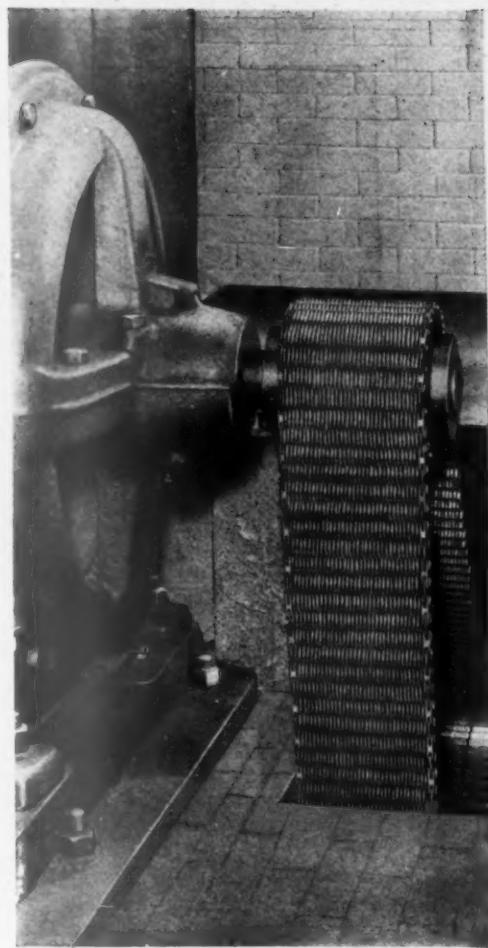
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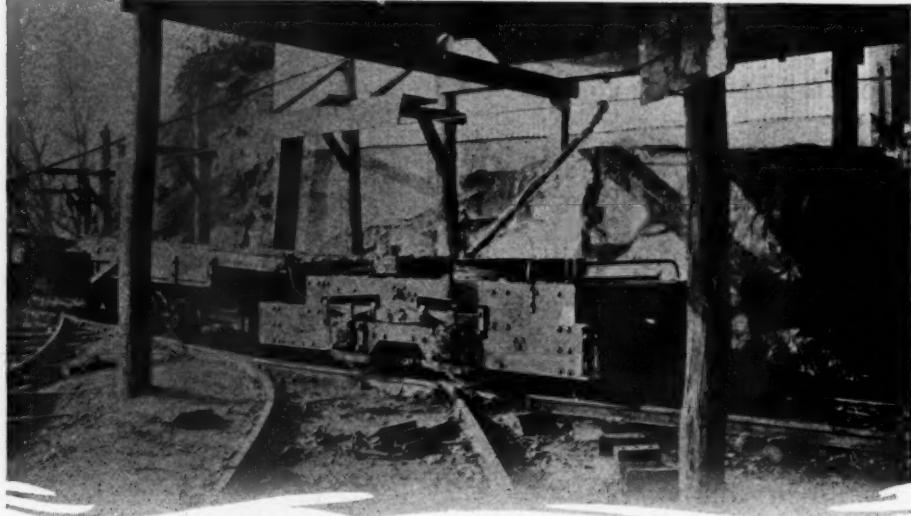
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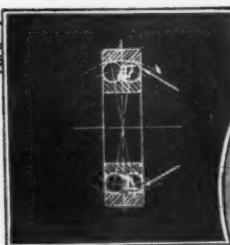
Furthermore, because of their relatively short axial dimension, ball bearings permit the designing engineer to obtain better operating characteristics by devoting more space to magnetic iron than would be possible with other types of bearings which are of greater axial length.

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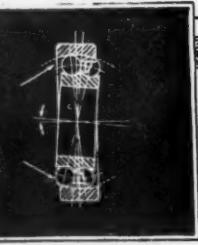
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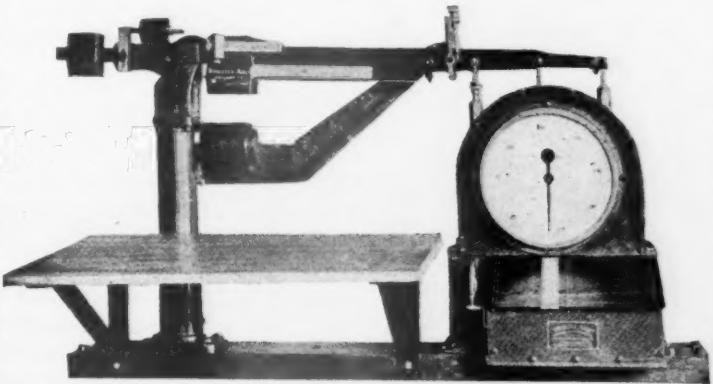
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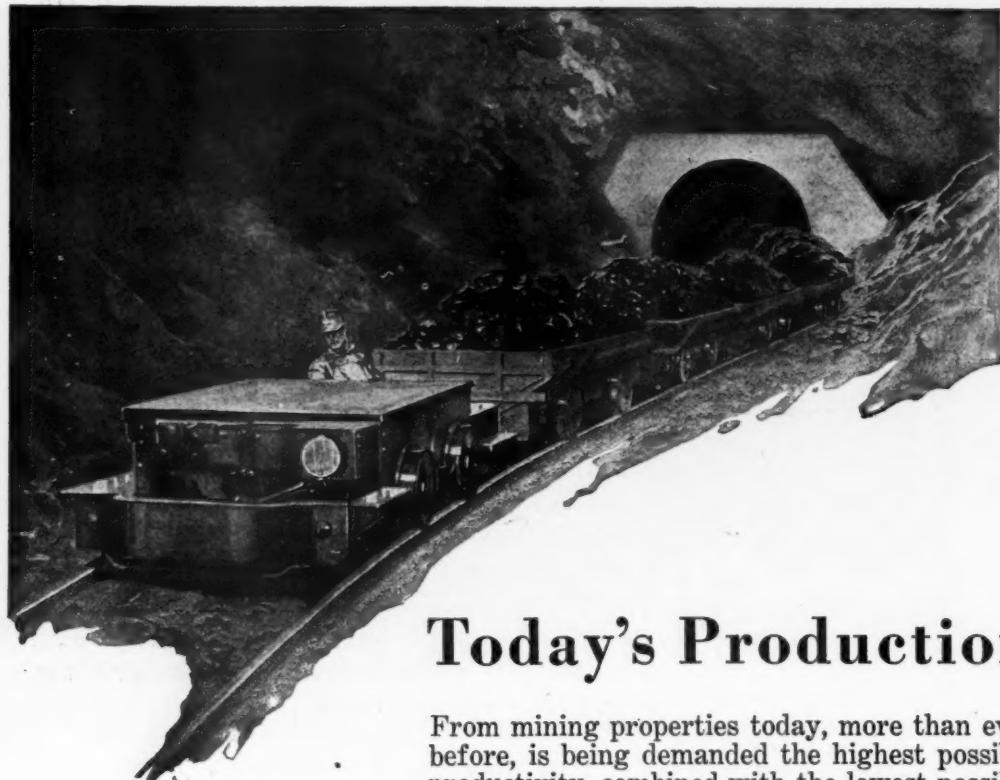
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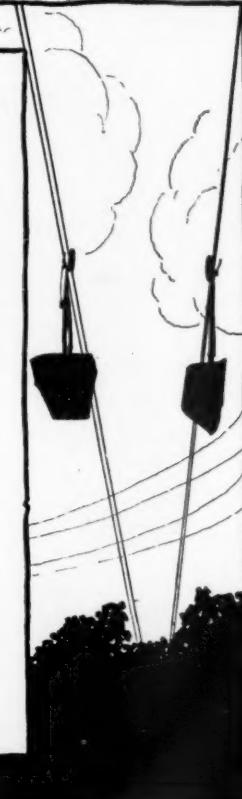
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(AMC-10)

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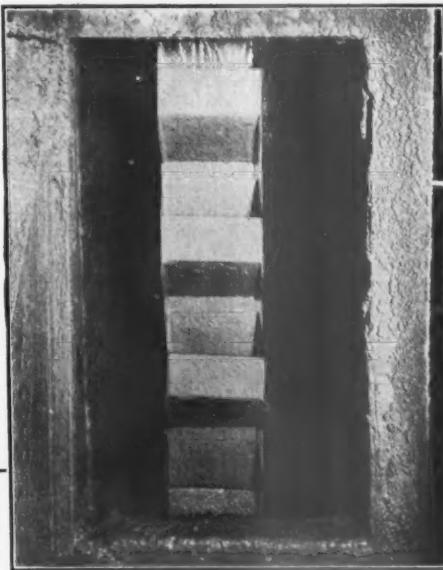


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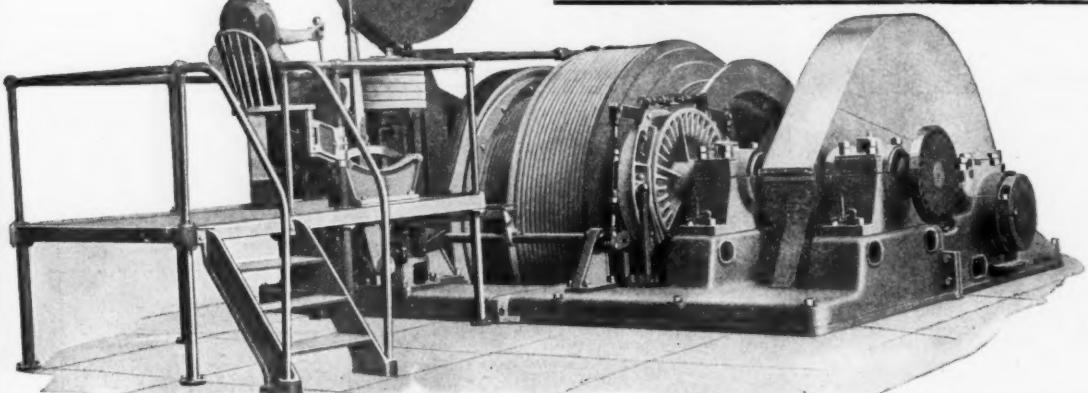
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have been on the job since 1909 and 1910—
and are still as strong and dependable as
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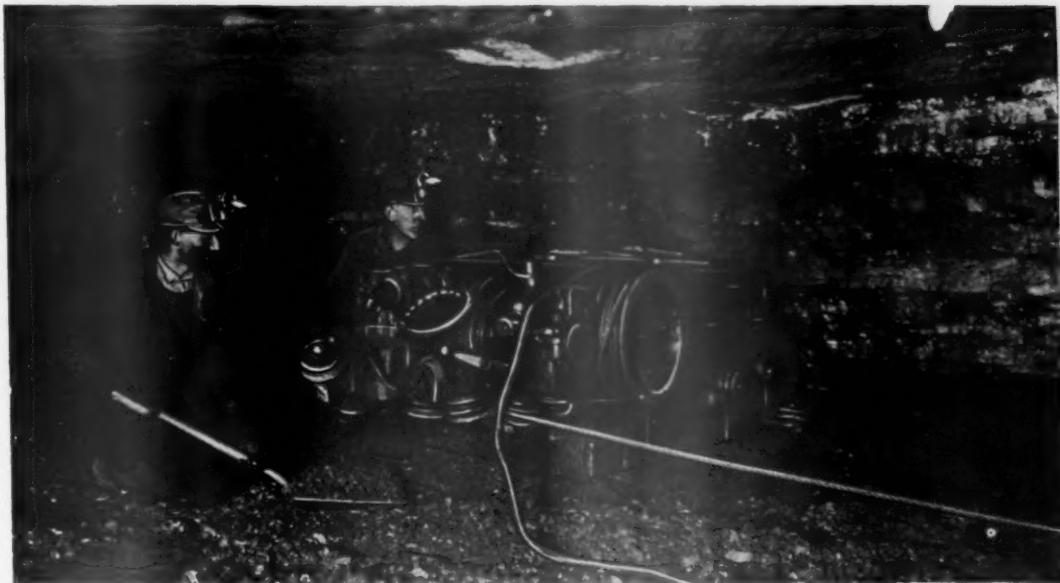
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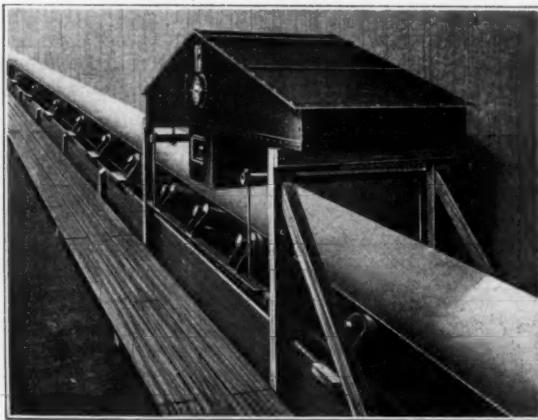
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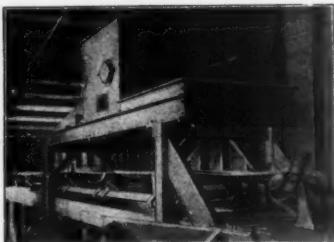
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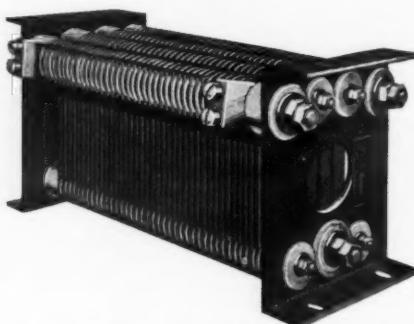
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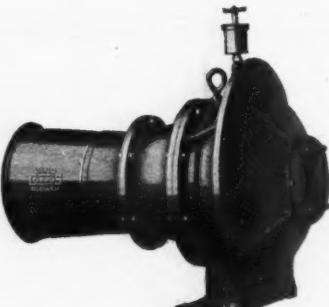
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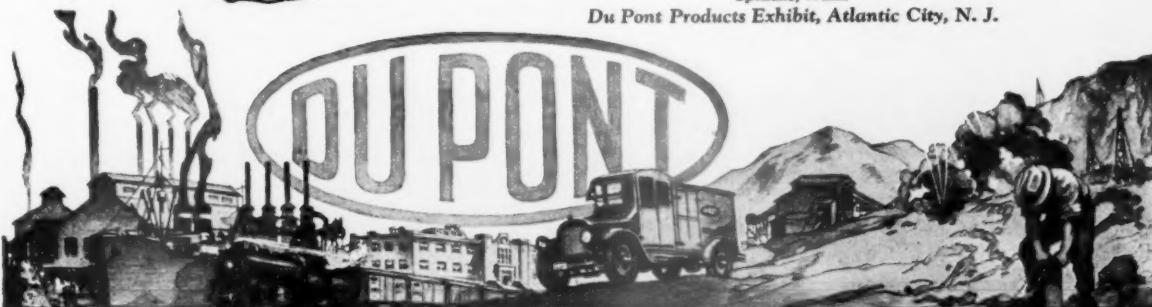
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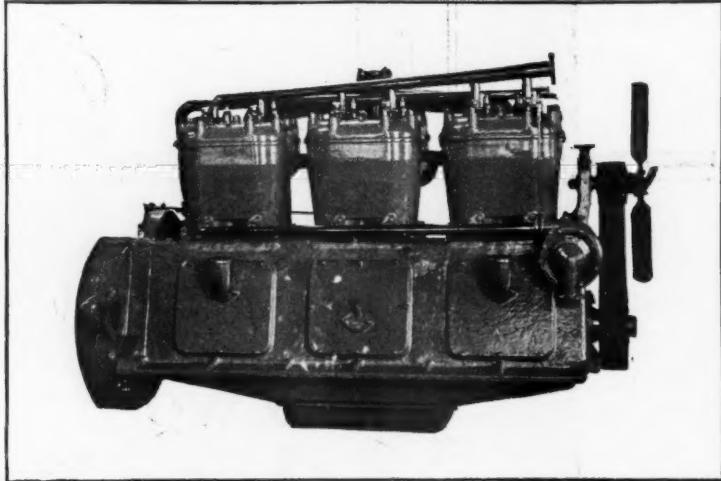


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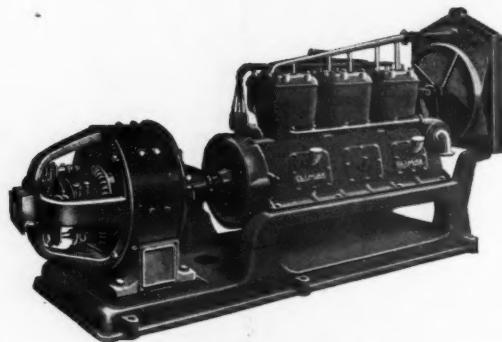
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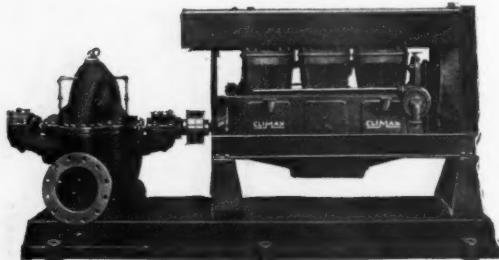


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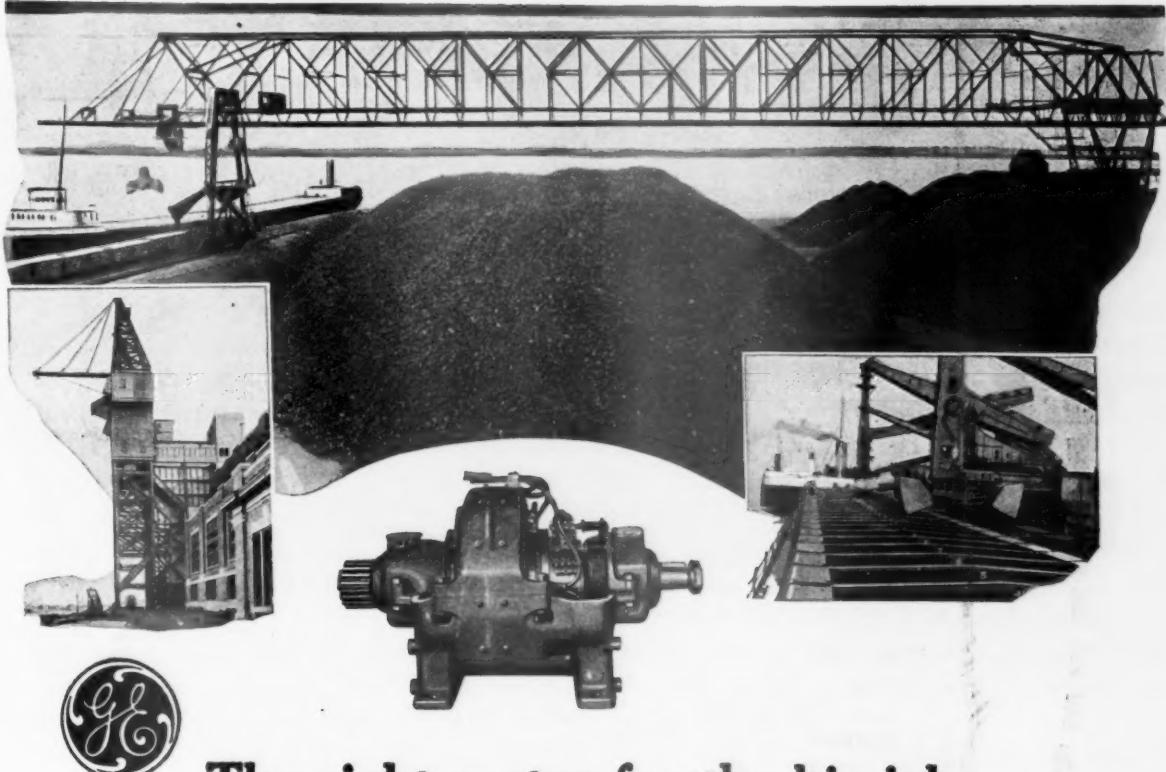
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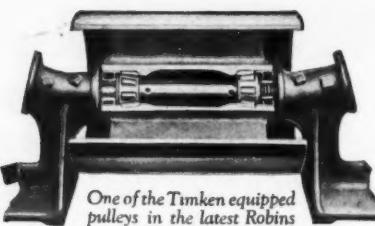
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Since the earliest steps in the development of bulk material handling machinery, the General Electric Company has been called upon to develop and manufacture the electrical apparatus for driving and controlling the mechanical appliances of this class. Applications of G-E equipment to such service are portrayed in Bulletin 48026, mailed on request.

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The MINING CONGRESS JOURNAL

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VOLUME 9

OCTOBER, 1923

NUMBER 10

THE TWENTY-SIXTH ANNUAL CONVENTION

THE proceedings of the twenty-sixth annual convention of the American Mining Congress, held at Milwaukee September 24-29, will form the basis for another year's effort to promote and safeguard industrial interests for the benefit of the mining industry and the public. The achievements of this convention are welded together into a constructive program. The American Mining Congress is expected to advance this program during the coming year.

Again the urgent needs and vital problems of the mining industry have been thoughtfully considered by representative leaders from all branches of the mining industry and from all parts of the country. The great practical value of joint deliberative action and cooperative effort on the part of the various branches of the mining industry once more has been demonstrated.

From the Southern Division, the Western Division, the Coal Division, the Standardization Division, the Industrial Cooperation Division, the General Tax Committee, the State Chapters, and their various committees, came recommendations relating to water-power development, the silver situation, selective immigration, coal exports, monetary reserves, relations with Mexico, labor disputes, mine-equipment standardization; federal, state and local taxation, "blue-sky" legislation, and other vital problems—recommendations which were the results of thorough study and specialized knowledge in the fields covered.

The problems presented, the fundamental principles agreed upon, the conclusions reached, and the results accomplished and to be accomplished, show the vast importance of organization and concerted action on the part of the several units of the mining industry.

Problems of industrial relations, governmental interference, and labor shortages are no longer local issues. Propaganda for nationalization of mines, for drastic governmental regulation, and for political domination by the Mine Workers' Union, can no longer be ignored and must be counteracted. "Blue-sky" legislation, immigration, the silver question, monetary reserves, export coal, and state and local taxation are all live issues.

These and many other problems were considered by the Twenty-sixth Annual Convention. Every unit of the mining industry, whether struggling with a fundamental problem that is common to the industry as a whole or with one that is individual, will find the American Mining Congress equipped and ready to help in securing a solution.

Manifestly, these issues can be dealt with more effectively if the mining industry stands as a unit for the principles of our Constitution, and against encroachments upon private initiative and private rights. The American Mining Congress, backed by the united support of all units of the mining industry, is in a position to render service of incalculable value to the country at large as well as to the industry which it represents.

THE TROUBLE WITH THE COAL INDUSTRY

WHY is it that in a search for that trouble in the coal industry in which the public is interested that none of those charged with responsibility dares to put his finger on or point to the real cause. Is it cowardice? The cause is so patent that he would be less than intelligent who failed to see it. Every shortage of coal which the country has ever experienced outside of war times is directly traceable to the one cause. What is that cause? The concerted action of powerful bodies of men who are able, if their demands are not met, to stop the industrial processes of the nation, a thing which Mr. Woodrow Wilson with all his sympathy for organized labor declared to be intolerable. A very small minority of men are able through force either threatened or applied to tie up industry and starve or freeze the public into submission. The law of supply and demand is superseded by the law of force and that force wielded by an organization which defends and justifies the Herrin massacre. The coal operator is required to substantially meet the demand of that organization. The coal industry has many troubles of its own, but the troubles which the public feel are directly traceable to that one cause.

TRADING OFF THE CONSUMER

ALMOST without exception every industrial strike settled as a result of public interference has resulted in putting additional burdens on the consumer. No other result can reasonably be expected. An arbitration commission or committee must be broad and unbiased to justify its appointment or to command the respect of both sides of a controversy. Such a board naturally yields to the most impetuous claims. The operators always contend for conditions which make for efficiency and cheaper production costs. We may perhaps admit that the operator has a selfish reason for keeping costs at the lowest point. There is more room for profit between a low production cost and the price the public can pay. But the operator is always on the side of efficiency and low costs and is the natural ally of the consumer. The worker naturally and always fights for higher wages and better working conditions. The first always and the latter usually means higher production costs. Higher wages apparently result in a direct net gain to the workman. Generally the operator can pass on the increased cost to the consumer. Usually he is obliged to do so or suspend operations. Suspension of operations means a lessened market supply and increased prices. In every event the consumer must pay; his influence in the determination of these questions is scarcely appreciated, and yet he is the principal party in interest. He illogically imagines that the public commission will look after that interest which its very composition makes impossible. It desires to effect a settlement and to justify itself to the public. To effect a settlement a commission must yield the larger part of the demands of the most persistent which will always be the most interested party to the controversy; to justify itself before the public it must avoid the animosity of the most boisterous and the most selfish which will if dissatisfied quickly vent its criticism through the public press. What chance has the dear public to get its due in such a settlement? We answer—none whatever—and we justify the reply by the record which does not disclose a single instance in which a change from the then present conditions has not added to the burdens of the consuming public.

THE HEEL OF ACHILLES

THE United Mine Workers of America at last have confessed that members of their union were responsible for the acts of violence and lawlessness committed at Herrin and elsewhere during miners' strikes. They now assert that the dastardly crimes perpetrated at Herrin and other points were fostered by leaders of the red forces in the United States who are attempting, they say, under the direct supervision of Moscow, to seize control of the labor movement of America and use it as the base from which to carry on the Communist effort for the overthrow of the American Government. They allege that it is their desire to reveal and stamp out the sinister and destructive groups and elements attempting to "bore from within" their own ranks and membership and to seize possession of the organization.

The Mine Workers' expose of the Communist program is commendable. THE MINING CONGRESS JOURNAL has no word to add to their indictment of the red forces. The fact that they now realize and appreciate the seriousness of the far-reaching and intensive activities of the reds may presage the dawn of a new day for the miners' organization, especially if their purpose now, with the admitted facts before them, is to stamp out the lawlessness attending labor disputes, to evict the lawless elements from their ranks, and to defend the personal and property rights of the American people.

It is not doubted that the red forces have numerous agents in the ranks of the United Mine Workers, as alleged by union officials. The public will not soon forget Herrin and numerous other cases of murder, intimidation, fiendish brutality and property destruction which have been attributed to striking union miners. What the public is at a loss to understand, especially in the light of the confession of the mine workers' officials and their present attempt to fix the blame on the reds for the dastardly crimes committed, is why the criminals at Herrin and elsewhere have been defended with the aid of union funds exacted, to a large extent, from unwilling contributors by means of the check-off.

It is almost unbelievable that union funds should have been used to defend agents of the Communist regime at Moscow, if it is true that they are responsible for the Herrin horror and other acts of lawlessness charged against union miners, if the United Mine Workers, in good faith, really are fighting to rid their ranks and the country of elements that are hostile to the American Government and the personal and property rights of American citizens. This is the vulnerable point in their alleged expose. Is the public to believe now that the United Mine Workers, as such, had nothing to do with the Herrin massacre and other crimes?

Although union funds were so used, it may be that the United Mine Workers wish to forget their errors of the past and to so conduct their organization in the future that its policies and actions will be above reproach. In addition to waging its fight against the reds, the organization should also seek to increase the efficiency and enlarge the productive capacity of its members. It should encourage them to improve their educational opportunities and to work for the betterment of their communities as well as for the success of the enterprises by which they are employed. Such a program is endorsed by THE MINING CONGRESS JOURNAL, which has always favored the organization of labor as a measure necessary to secure the efficient coordination of productive energy.

FEDERAL TAX REDUCTIONS

COMPARATIVE receipts from income and profits taxes, as reported by the Treasury Department for the fiscal years 1921, 1922 and 1923, show that federal taxes have been materially reduced. For the fiscal year 1921 receipts from these taxes amounted to \$3,228,137,673.75; for 1922, \$2,086,918,464.85; for 1923, \$1,689,177,409.38. Drastic reductions in expenditures and economies in administration have made it possible for the federal government to effect this great reduction in the tax burden. The unfortunate phase of the tax situation is that the entire saving accomplished by the federal government has been absorbed by state and local governments. As federal expenditures have been reduced, state and local expenditures have increased, and thus, generally speaking, taxpayers who have borne the taxes levied by the federal government have been denied the relief afforded by the repeal of the excess profits tax. The appeal of taxpayers for reduced taxes therefore should be directed to state and local tax-levying bodies and administrative officials and not to the federal government, which should be given full credit for its accomplishments in the right direction, and the blame for unnecessarily high tax burdens should be fixed where it belongs.

THE SURPLUS MIDDLEMAN

IN the days of barter and exchange the producers were in close contact with each other. With the advancement of modern civilization, the distance between became greater and greater. The big fortunes which distinguish civilization have mostly been made by the middleman. To him who by the use of money or credit could control and hold the supply until the consumer found it necessary to pay therefor a price which meant a large profit to the middleman. The producer was glad to get wages for the time spent in production. The middleman was in position to exact wages and profit because he was equipped to wait. The money and credit which enabled him to wait for a profit were not available to the producer, and even if available, call for a knowledge of trade requirements with which the producer was seldom equipped.

The more profitable field of exchange brought to its membership the shrewd and unscrupulous, as well as the ambitious—necessities of distinction multiplied the number of those who stand between the producer and the consumer, bearing down the price paid to the producer and bearing up the price paid by the consumer. At first the producer sold to the retailer, who in turn sold to the consumer. Then a field was discovered in which profitable operations could be carried on between the producer and the retailer and the wholesale business was developed, requiring for its support a wider stretch in prices between producer and consumer. Then the jobber, buying from the wholesaler and selling to the retailer, forced himself into the field of profit, again requiring a still greater stretch from which his emoluments could be taken.

The farmer is not a merchant. If he understood the game of merchandise, he would cease to be a farmer. But it is plainly evident that the number of these intermediaries is too great. The farmer must get more than 30 percent of the price paid by the consumer, else the farming business must continue to decline. The business of farming is the backbone of the country's prosperity. His purchasing and consuming power must not be too greatly abridged if the nation is to prosper.

The mining industry cannot be prosperous when farming, its sister basic industry, is unprofitable. The cost of distribution and exchange ought not to exceed the cost of production. The middleman must render a service to the producer at a fair cost. He must not suck the life out of the producer, nor overburden the consumer. These distributing agencies must become more efficient else the same law of supply and demand under which they were created will substitute less complicated and less expensive agencies to serve the important purpose of grading, packing and distributing the nation's food-stuffs.

The middlemen must so reform their practices as to permit profitable production and reasonable prices to the consumer. Failing to do this, cooperative distributing agencies will be developed which will turn a large part of this white-collar brigade to the plow handle, to the great advantage of the country.

THE REAL OBJECTION

WHEN coal operators resist, as they have been doing and will do, the effort to put their industry under legislative or administrative restraint, it may seem that theirs is a selfish effort—a desire to conceal certain facts from the public or to cloak their efforts to extort unjust profits. At least, that is what will be said about them.

The facts are that the operators resist these remedies because they know that they will not work. The operators are not willing to subscribe to a proposal which they know will do exactly the opposite of what the proponents say it will do. That is, the proponents of regulation say that the effect will be to bring about stabilization of the industry and to reduce the price. The operators know that, more than likely, it will increase the price. What they are resisting, therefore, is not an effort to deprive them of profit, but an effort to give them a profit which, under competition, they can't earn.

This statement seems to put the operators in a position of considering the public's good to the detriment of their private interest. That seems to clothe them with an altruistic purpose. Rather than that being the correct interpretation, these operators resist this movement on the dictates of "good business."

Many of the larger coal corporations have enough coal to keep their present plants going and expanding for a matter of fifty, or sixty, or more, years. If the operators are prudent managers, they will do the things today which will keep their businesses virile and alive through the expected life of the property. Therefore, they must adopt the policy today which will leave that business healthy sixty years from now.

When regulation is suggested, these gentlemen want, at once, to know how regulation has worked in other industries. Obviously, they go first into a study of the Interstate Commerce Commission and its effect upon the railroads.

There has just returned to Washington one of its most careful students. For six weeks he has been traveling in the State of Louisiana. Every day he had need of some kind of transportation. He says that, in six weeks, he spent just seven hours, in Louisiana, on a railroad train. And that was exactly the time required for him on a through train to get across Louisiana to New Orleans, and to get out of New Orleans and across the State. The rest of the six weeks he, like everybody else, traveled through the state on motor busses. The reason is that the motor bus is cheaper and far more convenient. And the building up of motor bus lines

was made possible by the rates which the railroads are charging, under regulation.

He reports, further, that in Louisiana there is a tremendous development of public roads. Over those roads all of the local freight is being carried in motor trucks. The railways, in that state, are used entirely for through business.

We get also this other most interesting picture. In the states of Maryland and Delaware the public roads are maintained in excellent condition. There has just been published in Washington a map of the public roads of these states, and a time table covering the schedule of motor busses over these roads. This map and time-table are exactly comparable to the map and time-table of the railroads.

The same kind of a map is now in preparation for the states of Pennsylvania, Ohio, and Indiana, where regular motor bus service is maintained on all the important public roads. The reason for the growth of the motor bus service and the motor truck service in all of this territory is that the railways, being under regulation, are charging rates which the people refuse to pay; they are taking to a substitute form of transportation. This means that regulation is killing the steam railroads, except for through business, and is building up a substitute system of transportation.

The operators in the coal field are not entirely blind. They see the consequence to railways of intensive commission regulation. Their investments are committed for long periods of years. They want to protect that investment during the life of the property. They see that regulation is destructive and is inclined to drive the people to the use of substitutes. They don't want to yield business to their competitors. They resist regulation which would drive them to it.

For this reason, the operators are not resisting regulation which would give them an increased and an assured profit from any motive of altruism; they resist it because they know that the remedy is destructive of the business for which they stand sponsors.

FARMERS AND TAXATION

BLATANT orators play upon the problems of taxation, and self-selected candidates for public office promise tax reforms in their efforts to win the popular favor and support of the farmers. They advocate plans for shifting state tax burdens from agriculture to other industries, and in some states they already have partially succeeded in having their programs adopted. But when they promise tax reforms in connection with federal revenue laws, they overlook the important fact that farmers as a class pay no federal income tax. The amount of revenue derived by the federal government from agriculture is negligible. The farmers already are favored under the federal law because of two important classes of exemptions—(1) they are not required to report as income the value of any food or material consumed by them which they produce, whereas no other class of taxpayers has any part of living expenses exempted, and (2) the \$2,500 specific exemption granted individuals plus \$400 for each minor child and dependent generally covers the balance of their net income.

Statistics compiled by the Treasury Department show that income of farmers and wage-earners, amounting to more than \$20,000,000,000, is wiped out by exemptions. Approximately \$20,000,000,000 of income is taxed under the federal revenue laws, and little, if any, of this amount represents income from farming operations. It

is very apparent, therefore, that the further reduction of taxes on small incomes, the reenactment of the excess profits tax and the enactment of a tax on undistributed surpluses of corporations would not shift any burden from the farmers. Instead it would shift a part of the federal burdens to the farmers. The federal tax reforms advocated by so-called "progressives" and "friends of the farmers" would place greater burdens upon mining enterprises, manufacturing enterprises, railways, mercantile establishments, construction concerns, banks, and business generally, but would not relieve the farmers of anything. On the contrary, the farmers would suffer. The increased cost of raw mine products, plus the increased cost of manufactured products, plus increased freight rates, plus increased construction costs, plus increased living costs, plus increased interest charges would be reflected in the price of practically every article and commodity used in farming operations. Especially would these increased costs be reflected in the retail prices of farm implements and agricultural machinery.

When the increase in farm taxes is compared with the increase in taxes on mines and railways, it appears that someone should do some shouting in behalf of the latter industries. During the last ten years the mines of the country have borne an increase of more than 1,300 percent in their total tax burden while mining properties have increased in value only 120 percent. The principal railways have borne an increase of 178.5 percent in taxes while their properties have increased but 25 percent in value, and railways are now paying more in taxes than in dividends according to 1922 statistics. Taxes of the agricultural industry, which pays practically no federal tax, have increased 126 percent in the last ten years while farm land values have increased approximately 90 percent. Incorporated enterprises, in 1920, paid approximately 40 percent of the aggregate state and local taxes and 59 percent of the total federal income and profits taxes collected, although these enterprises constitute less than 25 percent of the total national wealth as computed by various authorities. From these comparisons it does not appear that the farmers have anything to complain about in so far as taxation is concerned.

The cost of government must be met. There are fixed charges which can not be reduced. Public indebtedness, incurred to prosecute the great war and to provide state highways, local improvements, and soldiers' bonuses, must be paid. Incidentally it should be remembered that the portion of state highway costs borne by the federal government does not come out of the pockets of the farmers. It is absolutely necessary for the selected representatives of the people to exercise sound judgment in the formulation and adoption of revenue measures. The officeholder, politician, reformer, or candidate who goes astray in presenting the subject of taxation to the farmers, who misleads the farmers on vital issues, whether done deliberately or innocently, can not long expect to hold the support of agricultural communities, and is rapidly and surely drifting toward his political sarcophagus. The moment the farmers become aware of the direction in which they are being led by such campaigners, the latter will be shown the most convenient exit out of the field of politics.

THE COMMISSION'S SUGGESTION

ATTORNEYS of long experience say that the most elaborate case is invariably reduced to not more than three points for juries to consider. That seems to indicate that juries, whether in courts or in the court of public opinion, can grasp but a few things. That being true, the voluminous statements of the Coal Commission will, ultimately, be reduced to a very few points. Already, the public shows that it has grasped only the major suggestions. They are:

First—That a permanent coal commission be appointed to find out and publish the facts, and to exercise administrative control over the industry.

Second—That the lodgment of this extraordinary power be in a new department created within the Interstate Commerce Commission.

That is about all that the jury in the court of public opinion will grasp and consider. Reducing it still further to simples, the public will possibly think only of the suggestion that the Commerce Commission shall, in future, administer the coal business. Since that is the essence of the recommendations, we will confine our discussion to it.

The Interstate Commerce Commission, today, has greater power than was ever given to any administrative body, by any Government, at any time in human history. It has under its control railway property appraised at twenty billions of dollars, at least. For that whole property, the Commission alone may decide when capital may be increased; what rates of interest may be paid on borrowed capital; what the banker may earn when underwriting the capital issues; what use may be made of the capital when it is obtained; what 115 million people must pay in rates in order to make that investment safe; and it is now advocated that the Commission shall dictate what the employees of railroad corporations may earn. It has the power to say when the railways may extend. It, alone, has power to say when an existing railway may be abandoned. And there is no appeal from most of its decisions.

The bestowal of such power indicates, of course, that the people have tremendous confidence in this Commission.

Into hands that already are full of power and authority, it is now suggested that we thrust the administration of our coal industry. This great business represents the production from twenty-eight states, and the fuel which is the life blood of industry in our forty-eight states. And our coal must be the backbone of our foreign commerce. This tremendous and complicated industry, second only in importance to the railways, is thus to be administered as a sort of side line by the Commerce Commission.

When one realizes what power the Commerce Commission already has, and when one turns his imagination loose upon what control of coal must mean, he stands amazed at the tremendous power which must be entrusted to a board of eleven to fifteen men. These few individuals will thus have at their command the transportation facilities and sources of power of the greatest nation that the world has ever known. Nothing is more vital than coal and transportation. Nowhere has there ever been suggested a greater combination of power than this proposal means. The least that can be said, therefore, is that this suggestion is amazing.

Before subscribing to this suggestion, we want to inquire whether these two things belong together. The railways are public service organizations. Coal production is a private commercial enterprise. To regulate the railways calls into use one power of government. To regulate a private enterprise—if it can be done, at

all—calls into action an entirely different power of government. This, alone, suggests the unwisdom of trying to have one board administer two legal principles that are so dissimilar. Certainly any effort to apply one code to two dissimilar businesses is wholly incongruous, and need not be expected to succeed.

Merely consulting the public good, enlightened public opinion, in the time of President Roosevelt, decided that the railways and the coal industry should be disassociated. For financial reasons, control of coal and of railway properties had been thrown under a single management. Coal production was then being restricted to prevent over-development. The purpose then was to make investments in coal property profitable. The means by which this was done in those days was to have the railways refuse to make connections with any new coal mines which were not thought necessary. The people were, twenty years ago, so aroused over this device, created by private finance, that they passed two amendments to the Interstate Commerce Act to break up the practice. The last one was the Hepburn amendment, enacted in 1906. It was supposed that that law put an end, for all time, to a combination of railroads and coal properties. Now, it is proposed that the same old scheme shall be set up for the same old purpose. The only difference is that the managers of the new venture are to be a public, rather than a private agency. That leaves unchanged, however, both the principle and the effect. The principle is that, by denying transportation, over-development of coal properties may be prevented. The effect is to give existing coal properties a monopoly of the market; the exclusion of competition; and the operator an incentive to increase prices and to become lax in management.

It must be admitted that when this suggestion is made, the confidence which the people have in the Interstate Commerce Commission may possibly lead them to give ready assent to the proposal. The danger is that their confidence in the Commerce Commission may blind them to the practical effect of the thing, which is to set up a regulated monopoly of coal to the destruction of competition and to the impairment of the incentive of private managers to become economical. Anyone who looks at the proposal in this light must take alarm at the tendency as being wholly destructive and as having no saving virtues.

TARIFF CHANGES

ALTHOUGH the tariff law has been in effect for more than one year, the Tariff Commission has taken no action on any schedule under the flexible tariff provision, other than in an investigational manner. The Commission has been considering numerous applications for revision of schedules and is making investigations thereon. Several conferences have also been held with the President, and with President Harding prior to his death, on the application of the flexible provisions. The policy has been reached to consider cases either on appeal or on motion of the Commission. When the case involving the tariff on magnesite was reached on October 1 for hearing, the Commission, on application of the Austro-American Magnesite Company, postponed the case until December 5.

The Commission also recently reported to the President on the pig iron tariff. These investigations concern the difference in cost of production in the United States and in foreign countries. President Coolidge has indicated that he does not favor wholesale changes in the tariff on the ground that they would unsettle business.

CONFERENCE CONSIDERS MANY PROBLEMS

THE conference on mine taxation was attended by delegates from 24 states. Paul Armitage of New York, chairman of the General Tax Committee of the American Mining Congress, called the meeting to order and explained that the conference would take up live subjects which were being worked out by the Bureau of Internal Revenue at the present time. A. G. Mackenzie, secretary of the Utah Chapter of the American Mining Congress, presided.

In his opening address, Mr. Mackenzie said that relief from high tax burdens will not come until a general sentiment can be crystallized and made articulate and effective through expressions by organizations of taxpayers. "We employ in this country," said Mr. Mackenzie, "far too many persons to watch other people work and to criticize the way they do their work. Every political jurisdiction, from the school district to the largest federal activity, participates. The statistics, where obtainable, are startling.

"We are paying for too many public activities that are not needed or that are not proper subjects for public handling. We are paying vast amounts for unnecessary construction and other expenses that grow out of these activities. The situation has become so pronounced that when an executive here or there abolishes a few offices, bureaus or departments, his name rings from coast to coast.

"We all can recall the days when the victim of a business reverse in this country fell back on his own reserves of property or character to restore his fortunes and never thought of any other course; but now, thanks largely to the vicious preachers of self-seeking politicians and office holders, many turn instead to the nation or state to demand legislative or other action that will recoup private losses from public treasuries. This is not only a perversion of government but tends to kill the buoyant, self-reliant individualism that has been so characteristic of the United States and that, more than anything else, has made this country unique and pre-eminent.

"Inefficient, wasteful or meddlesome government is not good government. Much of the social, industrial and political unrest of the day can be attributed to the bad example of government. Those who actually toil and produce find no contentment or inspiration in the contemplation of hordes of public employees, only some of whom render full and necessary service; in the costly

buildings to house needless activities, or in legislation designed to favor a few or advance individual political fortunes at public expense.

"If the taxpayers, through proper organization, make their sentiment known, and punish with defeat all who ignore it, the remedy will be applied quickly and effectively. Relief will not come otherwise. Action, not conversation, is required."

The subject of inventories as related



Lightening the Tax Burden

to federal taxation of mining companies was discussed by Henry B. Fernald, of New York, who stated that the revenue department, in its regulations and decisions, has not been ready to admit that a basis of inventories "in accordance with the method of accounting regularly employed in keeping the books of the taxpayer," as allowed by law, constitutes a proper basis for computing inventories, unless such basis is in exact accord with the basis prescribed by the commissioner's regulations.

The use of retrospective appraisals in the determination of invested capital, depreciation and depletion, was outlined by W. I. Kircaldie, of Milwaukee. The revenue laws require or permit the taxpayer to adjust his property accounts in many respects, but the burden of proof is upon him to substantiate a claim for any readjustment or revaluation. The importance of the kind of information the government wants, the need for having that information complete, and the desirability of having it computed and assembled in proper form, were emphasized as justification for the employment of expert appraisers.

The second session was presided over by Henry B. Fernald. Depletion was the subject of an address by Paul Armitage,

of New York, who argued that the present single method of computing depletion is not warranted by the law, but is in disregard of its express terms wherein it provides that the allowance should be reasonable "according to the peculiar conditions in each case." Mr. Armitage holds that the commissioner has authority under the law to establish an elastic rule for depletion which would simplify the work of the income tax unit.

The practical application of the provision of the tax law relating to discovery value of mines was outlined by George E. H. Goodner, of Washington, who said that by all rules of construction the provision must be interpreted as freely as any other part of the revenue act, and all reasonable doubts as to meaning resolved in favor of the taxpayer.

The fundamental principles inherent in the mining industry which are different from other enterprises, from a taxation standpoint, were developed by Wade Kurtz, of Missouri, who contended that ordinary fixed accounting rules will not apply to mining ventures; that the entire life of a mine is the only correct accounting period; that the interim computation of profits are only estimates; that large interim profits or losses as computed by the accepted methods should be leveled by liberal accounting methods and common sense.

The third session opened with Bruce P. Tyler, of Virginia, in the chair. Walter A. Staub, of New York, addressed the conference on the subject of reorganizations of mining companies. Although highly technical, the subject elicited considerable discussion. After analyzing all phases of the question of reorganizations, Mr. Staub said that a decision whether or not to reorganize should be reached by a company only after all the numerous considerations pro and con have been carefully weighed.

In discussing taxation of dividends and other corporate distributions, Arnold R. Baar, of Illinois, presented a novel viewpoint with respect to distributions from a depletion reserve based on discovery value.

The foregoing papers will be found to be of great importance to taxpayers whose cases involve any of the questions treated. They will therefore be printed in a separate bulletin for general distribution. The resolutions adopted by the conference appear elsewhere in this journal.

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With its driveways, bridle and foot paths, Rock Creek Park adds to the beauty of the Nation's Capital

PRESIDENT JENNINGS REVIEWS ORGANIZATION'S WORK

Mining Industry Demands Square Deal for All—Attempted Domination by Mine Workers and Unjust Legislation Vigorously Protested

AT THIS Annual Convention it is desirable to review the past year and to see how far we have progressed towards the goal we desire to attain. This presupposes that we have a goal—an ideal which we strive for and towards the attainment of which we strive for and towards the attainment of which our thoughts and our efforts are directed in the sure hope that eventually that which we really want most we will achieve. The ideal that animates the members of the American Mining Congress is the same that animates the vast bulk of the American people—the desire to see a fair deal given to all of the factors that go to make up the wealth of this our great and glorious country.

The Mining Congress concerns itself primarily with the mining industry, but it takes cognizance of the other factors, agriculture, transportation, and manufacture, which are necessary to make up the national life; and while the officers and members of this congress naturally urge the claims of the mining industry to recognition, they have no desire to unduly and selfishly urge their claims. Their whole aim is to see that our industry gets a true share of the rewards belonging to it and that it does not have to bear any undue share of the burdens that have to be met by all in order to carry forward the progress of our people.

Just as agriculture can be said to be the basis of life, so the mining industry can be said to be the basis of civilization. It is only when man began to extract the wealth beneath the soil, to use copper, iron, coal, gold, and silver that civilization can have been said to start.

At the present time it can be safely said that there is nothing used by man which does not require in some part of its preparation the products of the mine.

The mining industry has two big problems to face. The first is a fundamental one, and that is that all mines are wasting assets. There is one thing, and one thing only, that can be said truly of all mineral deposits, and that is that they have a limit.

The more you take out, the less remains to be taken out. When once a mineral deposit is exhausted the expenditures that have been made for its opening and development, for the plant necessary to treat it, for the houses necessary for its employes to live in, are as a rule of little or no value. This fundamental fact should never be lost sight of either

by the legislator seeking to impose a fair share of the tax burden upon the mining industry, or by the investor who desires to see an adequate return on his capital invested.

The second problem that concerns the mining industry is one which I think will tend in the course of time to correct itself. The problem is concerned with the enormously increased rate at which minerals have been extracted in the last



Sidney J. Jennings

generation. Consequent upon that tremendous out-pouring of mineral wealth, there has probably been an unequal distribution of the resultant accumulation which has tended in some degree toward the unrest of the world. Some realization of the enormous rate at which minerals have been extracted can be had if we take two or three of the minerals of whose rate of production we have record. From 1493 to 1921, inclusive, there have been produced, in round figures, \$18,370,000,000 worth of gold. More than one-half of this has been produced in the last thirty years. During the same above-mentioned period of time of 429 years there have been produced 12,740,000,000 ounces of silver. More than one-half of this has been produced in the last forty years. While the records of the production of coal have not been so well kept as those for gold and silver, it is probable that more than one-half of the total recorded production of coal has been produced within the last

generation. I have said that I think that this probably will tend to correct itself. It is difficult to conceive that the rate of increase can continue in the future with the same momentum that it has in the past generation. It will continue to be a necessity for the leaders of the mining industry to strive by all available means to properly utilize our mineral deposits and by the use of more economical methods of extraction of production, convert that which is now waste material into ore, thus prolonging the life of these deposits as far as it can be done. For when the present mineral deposits are exhausted, it is highly improbable that new ones will grow in time to be used by man.

In carrying out the ideal of seeing that the mining industry give and receives a fair deal the American Mining Congress plays a prominent part. Its history of twenty-six years has been a record of much good work accomplished and some injustices prevented. Its Secretary, Mr. J. F. Callbreath, is in large measure responsible for the present high standing of the American Mining Congress in the estimation of the industry, and is zealous in his efforts to promote its welfare. His broad outlook and keen sense of fair play aided by consultation with the leaders of the industry, have led him to support sane policies which have commended themselves to all fair-minded men.

Without attempting to enumerate all of the services rendered by the American Mining Congress to the industry during the past year, I shall rapidly pass in review those which seem to me to be of most general interest. The American Mining Congress by means of its journal focused the attention of all those interested in the mining industry on the problems immediately confronting them. It affords a means of discussion and concentrating of ideas which result in the passing of resolutions in the Annual Conventions embodying the opinions of those concerned with the welfare of the industry. This service met not only with the recognition of the industry itself, but with that of the national government as embodied in communications from the late President.

The outstanding difficulty in the mining industry as in many others is the proper adjustment of the relation of employer and employee. As far as the metal mining and production are concerned, this relationship has during the

past year been reasonably satisfactory to both parties. In the production of coal, however, there has been during the past year a nation-wide strike, brought about by the tyrannical action of the United Mine Workers of America trying



Louis S. Cates, Managing Director of the Utah Copper Co., Newly Elected Director of the American Mining Congress

to impose an absentee Directorship of labor upon all coal-mining industry. I cannot believe that it is possible that the American people will tolerate the domination of a small body of men whose interests lie in perpetuating the power they have rather than the welfare of labor. Their domination is such that a fundamental industry like coal mining can be brought to such a pass that more than 60 percent of the required production shall cease. Those who attempt to continue production are, at the behest of this small number of men who are not held to account for their acts by any government, importuned, reviled and murdered.

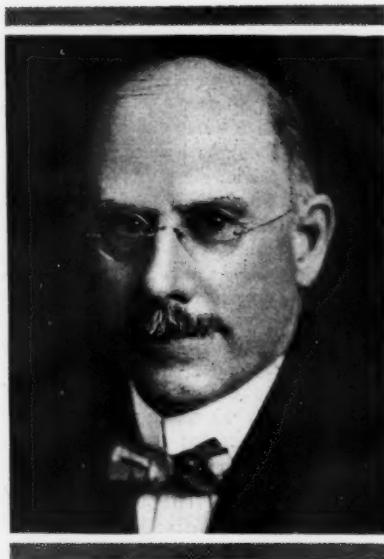
The brunt of the work of setting forth before the people of the United States the true facts regarding the activities of the United Mine Workers of America has been undertaken by the National Coal Association, presented in a series of briefs before the United States Coal Commission, the history in many states of the intimidation carried out to its conclusions of murder and bloodshed by the United Mine Workers of America in their attempt to impose monopolistic control of the coal mining labor of the United States. While the bulk of this work as I have said was done by the National Coal Association, the American

Mining Congress helped in every way that its resources would permit it, and the work that the American Mining Congress has done in this connection has met with the approval of both the anthracite coal producers and their subscribers in the bituminous coal industry. Both the National Coal Association and the American Mining Congress have worked so that the relationship existing between employer and employee in the coal industry should be so adjusted that capital should be adequately rewarded; labor should receive sufficient remuneration to live and save; and consumers should obtain full and services they want at the lowest price computable with the above two requirements.

The Division of Industrial Cooperation, authorized by the 25th Annual Convention, at Cleveland, in 1922, made rapid progress in its preliminary organization work. A national chairman was selected, and the process of organization included committees in nineteen states of the Union. In states where both coal and metals are produced two separate committees were selected, each with a separate chairman and personnel.

The chairmen of these state committees prepared questionnaires summarizing practice in welfare work and sent them to approximately 8,000 coal and metal mining companies. Fourteen

panies of the country, to find out just what is being done by the industry to promote industrial peace, and to give the miners opportunities for self-advancement, and then to place the results of the survey before the members of the Mining Congress so that they may guide



F. L. Morse, President of the Morse Chain Co., Newly Elected Director of the American Mining Congress



J. G. Bradley, President, Elk River Consolidated Coal Co., Newly Elected Director of the American Mining Congress

states have rendered their reports to the national chairman and the other states report progress.

The purpose of the division is, first, to make a survey of the mining com-

their own efforts by the knowledge of the best that has been done. The Mining Congress does not sponsor any specific plan of relationship between the employer and the employee; it does endeavor to point out the points of success and failure of plans which have been tried and to furnish a common source of information for a plan of industrial harmony.

In April, 1923, a luncheon was held in New York for the discussion of the work of the National Committee, which was attended by more than 50 leading mining men—coal, metal, and oil. Resolutions were adopted pledging the earnest support of the industry in this work.

Of notable importance is the fact that the state committees have been so in sympathy with the work that in practically every instance the Committee has borne the entire expense of the work.

Following the Convention at Cleveland in October, 1922, the Tax Division immediately organized the General Tax Committee, which was authorized by resolution of that Convention. This Committee is composed of thirty-six members, representing all of the states in which mining is an important industry. Special consideration was given by the Tax Division and this Committee to pending revenue legislation until the

close of the 67th Congress on March 4, 1923.

Several proposed new taxes of major importance to the mining industry were not passed at the last session but will probably be revived in the 68th Congress. One such proposal provided for the reenactment of the excess profits act; another provided for a graduated tax on undistributed surplus of corporations. The General Tax Committee is now the most compact organization in the United States representing any single industry.

The Tax Division has earned the encomiums of the Internal Revenue Department as accurately representing the pulse of the industry and as being helpful in disseminating information. The Division is consulted by taxpayers on many important questions in connection with the preparation of their returns, the presentation of claims, procedure before the department and other tax matters.

Presentations have been made to the various governmental divisions having tariff matters in charge provisions of the recently enacted tariff law. These presentations have to do with administration of items affecting the mineral industry and have been of wide service to the industries affected. Close contact has been maintained with the possible developments under the flexible provisions of the tariff act which permitted consideration by the Tariff Commission of all schedules for possible revision.

The prosperity of the mining industry under the protection afforded is self-evident. The mining industry has never before had the protection which the present law affords and this condition has caused many idle properties to become prosperous mining operations.

The interests of the mining industry under the claims filed with the Mixed Claims Commission for losses sustained in consequence of the war have been zealously guarded by informal presentations made to the Mixed Claims Commission and by keeping the mining industry advised of developments before the Commission. The claims of the mining industry under the Mixed Claims Commission totaled more than \$25,000,000.

After many months' work, the Nicholson resolution, providing for a silver commission to be appointed from the body of the Senate, was passed. Because

of the sad and untimely death of Senator Nicholson, Senator Oddie, of Nevada, became chairman of the Commission which was appointed, and the work of the Commission actively began. The Mining

this legislation, which was finally laid aside without report by the committee which had it in charge.

The American Mining Congress has always been in the forefront in the efforts to adopt standard machines and standard methods of mining. It cooperates with all the prominent agencies in the United States who are working in the same direction. The efforts of the committees entrusted with this work have borne fruit in reducing the costs and the value of their work will be increasingly apparent as the standards recommended become more widely used.

The potentialities of an oil shale industry in the United States have engrossed the time and study of a large section of the members of the American Mining Congress.

The receipts for the year ending June, 1923, were over \$179,000, which shows that the mining industry appreciates the efforts of the American Mining Congress.

In the coming year many problems loom up before the Mining Industry—problems in the solution of which the American Mining Congress should play an important part. Discussions to be initiated on the floor of this Convention should be carried to the logical conclusion of solutions passed embodying the sane judgment of the leaders of the industry. Your energetic and devoted officials will, with the guidance of a new president to be elected at this meeting, do their utmost to see that your wishes are carried out.



H. W. Seaman, President of the Trojan Mining Co., Deadwood, S. D., Newly Elected President of the American Mining Congress

Congress has been in constant association with the Commission in this work, the last meeting being held in Reno. It is evidently to be expected that the silver Commission which was sponsored by the Mining Congress will work out a constructive plan safeguarding the future of the silver industry.

Legislation was before Congress in the form of the Denison bill, which, while in its purpose was worthy, was so drastic in its provisions that it would have made impossible the financing of mining companies regardless of their integrity. The Mining Congress has always favored any legislation which would eliminate dishonest promotion. The legislation proposed, however, was dangerous to the whole industry in that it made possible any new financing. The Mining Congress appeared vigorously against

GRAPHITE IN 1922
T HE sales of crystalline graphite in 1922 amounted to 1,849,776 pounds, valued at \$85,242. This was an increase of 56 percent in quantity as compared with 1921, according to a statement given out by the Department of the Interior, through the Geological Survey. The average value of the graphite per pound was 4.6 cents in 1922, which was 1.8 cents less than in 1921.

The quantity of amorphous graphite sold was 2,200 short tons, which was an increase of 19 percent in comparison with 1921. This quantity represents the sales of only two companies.

The Acheson Graphite Company at Niagara Falls, N. Y., reported sales of artificial graphite amounting to 13,031,926 pounds in 1922, an increase of 121 percent as compared with 1921.

GOLD STANDARD MENACED

THE unfortunate plight in which the gold mining industry finds itself, due to the fixed price for gold, was emphasized by H. W. Seaman, president of the Trojan Mining Company, in his address to the first general session of the twenty-sixth annual convention of the American Mining Congress. In part, Mr. Seaman said:

"In all international debt transactions a repayment in actual gold is nominated in the bond, and that gold in every case is the equivalent of \$20.67 of American gold for every ounce of gold so stipulated to be repaid. The gold debts of the various governments of the world now reach the huge total of more than 382 billions, figured in American dollars. The available monetary gold in the entire world is estimated to be less than \$9,000,000,000. This is a ratio of 9 to 42, or reduced to its lowest denomination one of 3 to 14, which is entirely out of line with the ratio of 40 to 60, or 2 to 3, in our own gold monetary system.

"In 1922 our mines produced \$47,900,000 of gold as against a total of \$98,000,000 in 1915. Our national obligations, payable in gold, increased from practically nothing in 1915 to the present sum of twenty-four billions in 1923.

"There has been since 1916 more than \$60,000,000 of gold used in our domestic trades and arts. In 1920 this amounted to \$82,000,000. Economists agree that the free flow of gold at stable price is one of the concomitants of a workable gold standard, but in spite of this jewelry manufacturers have purchased this enormous amount of gold admittedly for commodity use, at the basic price of \$20.67 per ounce, which is much less than it can be produced for in normal volume by the gold mining industry of the land. Less than fifty millions produced from our mines and more than sixty millions demanded and withdrawn from the Treasury to be made into jewelry.

"The dependable source of the major gold production of the world is from its so-called low grade mines. The low grade gold mines of the United States are practically out of commission because of the abnormal cost of operation and because gold is the one thing in the world that has a fixed price, one price for either monetary or commodity use.

"We agree with the Treasury Department as to the fixed monetary price, but emphatically disagree with its view as to the commodity phase of the problem. If there is a way out of the dilemma that will both increase the integrity of the world-wide gold standard and will strengthen that necessary institution and that will at the same time both conserve our gold resources and afford ur-

gently needed relief to a great national and fundamental industry, then that relief should be forthcoming. If the government can find an equitable way to differentiate between the monetary and the commodity uses of gold so that commodity gold will be brought under the operation of that otherwise inexorable

law of supply and demand, then it becomes the duty of the government to enact such constructive legislation as will harmonize practice with precept."

[Note: Mr. Seaman's address will be printed in full in pamphlet form and will be available for distribution about October 15, 1923.]

COMMON INTERESTS SHOULD SOLIDIFY CITIZENRY

*Class Divisions and Selfish Dissensions Inimical to National Welfare—National Prosperity Demands Industrial Cooperation**

By HONORABLE IRVINE L. LENROOT
U. S. Senator from Wisconsin

UNLESS business men, laboring men, farmers and every class of citizen shall evidence a different attitude toward their government, a constructive rather than a destructive attitude, disaster is sure to come. This was the basis of the forward looking address delivered at the annual banquet on Friday night by the Honorable Irvine L. Lenroot, United States Senator from Wisconsin. In part, Senator Lenroot said:

"We must substitute for a narrow selfishness, a broad national vision, a realization that there can be no permanent prosperity for any class of our people at the expense of any other class.

The business man must learn that though he may be in the mining business in the west, or the textile business in New England, he is vitally concerned with the welfare of the wheat grower of North Dakota, the dairymen of Wisconsin and the cotton planter of the south, with the wages paid upon our railroads and in our factories, and profits made by their owners. He must learn that he is vitally concerned in our government, not alone because of what it may do directly for or to him, but lest the principles upon which it is builded be utterly destroyed.

"Is your interest as an American citizen fulfilling the obligations of citizenship, or is it as a member of your par-

ticular industry or class? Do you give thought to the problems of the farmer, the laboring man, the merchant, the manufacturer, from the standpoint of the general welfare or only as to how those problems may affect your own particular business? Are you interested in the problem of immigration from the standpoint of Americanization and our future citizenship or only from the standpoint of securing a larger supply of common labor?

"The greatest business in the United States today is the business of the government. It is a great corporation with 110,000,000 stockholders. The business should be run for the benefit of all the stockholders and not for the benefit of the board of directors consisting of Congress and the executive

departments of the government. There should be no division of the stockholders into classes and no favoritism should be shown any part of them. It is a business not run for profit but for service. It should be run as economically as possible. But if the stockholders take no interest in the corporation, it will be inefficient and extravagant, and the officers will use it for their own benefit.

"Capital and labor must not regard each other as enemies but as friends. Each has its rights and they should be respected. The captain of industry who fights all organized labor is a reactionary who has been asleep for twenty years. The labor leader who tells his followers that capital is their enemy is either a socialist or a fool."



Hon. Irvine L. Lenroot

*Address delivered before 26th Annual Convention American Mining Congress.

EVOLUTION OF THE LABOR PROBLEM

By DR. LAWRENCE F. ABBOTT
President, The Outlook Co.

UNFORTUNATELY I am in the labor fight. I do not speak as an academic theorist. For thirty-two years I have been an employer of labor and I have had some disastrous struggles with the trade unions.

In spite of the follies and crimes of organized labor in the present state of industry I support the general principle of the trade union. A high authority, not a labor man himself, states the three-fold function of trade unions is to be the following: fighting, maintaining mutual benefits, and providing for collective bargaining. No intelligent man can quarrel with the mutual benefit phase of the trade union. Collective bargaining also is now generally recognized as of service to industry at large. It is the fighting function that makes all the trouble. It is a truism, however, to say that it takes two to make a fight, and during the hundred years that trade unions have been in existence, capital has been an equal participant in the warfare with labor. Capitalists, it is true, have been more polished and refined. They have not thrown bricks and blown up bridges and buildings with dynamite, but they have fought just the same, and I am not sure but that it was capital that began the warfare.

Let me briefly review the origin of this warfare.

The original man was an extreme individualist. He hunted and labored for himself and for his female and cubs, and his hand was turned against every other man whose interests conflicted with his. Then came the family. A good picture of the family industrial system is given in the legend or history of Jacob in the Old Testament. Jacob, it will be remembered, worked for seven years, and his wages was a wife. And Jacob was not satisfied. He seems to have been one of the first men recorded in history as dissatisfied with the wages system.

Then came the tribe, in which form of industry the tribal head managed everything and everybody for the benefit of the tribe. Out of the tribe grew the nation, in which the industry of the individual or of the family or of the tribe was federated. The intellectually or physically strong were in command. Feudalism was not only a political system, it was an industrial system.

It was only a very little while ago in the history of the world that the indus-



trial system under which we live came into being. It owed its origin to the steam engine, and is called—or ought to be called—the factory system. The factory system is not much more than a hundred years old. Out of the factory system there came to be developed a long line of captains of industry or capitalistic kings—use whichever term best suits your sympathies. The great army of workers, which was organized or which grew up naturally under the factory system was commanded, clothed, fed, court-martialed, put in the guard-house, exactly like the soldiers of a political army, by the captains of industry or capitalistic kings. In self-protection the rank and file of this army of wage workers hit upon the idea of the trade union.

It is not much more satisfactory to discuss the question whether the outrages of the trade union produce the hard-hearted selfishness of the capitalists or whether the hard-hearted selfishness of the capitalists produces the outrages of the trade union, than it is to discuss the old riddle as to which came first, the hen or the egg. It is a fact, however, that the human abuses of the early days of the factory system in England apparently hardened everybody's heart, and industry in English-speaking countries gradually, by process of natural evolution, became a state of warfare

in which fighting, either physical or argumentative, was the normal condition with occasional periods of temporary truce. And that is where we are today in industry, exactly as we are in international political relations. Can some more reasonable and more efficient system of human relations in industry be found? I think it is possible.

The reason I think some more efficient industrial system will be found is because it is actually already being found. Arbitration, judicial procedure, and conferences through elective representatives are actually being substituted for strikes, exactly as some visionaries are struggling to see if they cannot be introduced into international political relations.

This principle of elective representation in industry finds its expression in what is known as the Shop Committee Plan. It is the principle which has given us political democracy and religious democracy. Political democracy is the system by which the citizens of a state shall have some power in choosing its administrators and determining its conditions of life; religious democracy is the system which enables the worshiper to exercise a choice in the adoption of creeds, rituals, and ecclesiastical leaders; industrial democracy is that state of social economics in which the worker shall have a voice in choosing the management and in regulating conditions of labor. Religious democracy was established by the Reformation. Political democracy, germinating in Magna Charta, was confirmed and made permanent by the English, French, and American Revolutions.

The industrial world is now going through a period of ferment out of which will rise, I am confident, a form of industrial democracy in which there will be a higher development of economic and social justice than the world has yet seen.

But the Shop Committee Plan, or the plan of giving the workman a voice in the management, while it has sometimes failed (and so, by the way, has political democracy sometimes failed, but for all that, the American people are not going back to political despotism) it has had some notable successes. It has helped the Pennsylvania Railroad; it has saved the Philadelphia Traction Company; and it is heartily endorsed

by one of the largest industrial corporations of America.

In the "Iron Age" for June 14, Mr. John Calder, an industrial engineer of experience and standing, describes the operation of the Shop Committee Plan in the Bethlehem Steel Works. In five years under the Shop Committee Plan, 2,365 cases in controversy between the men and the management have been decided in the four original plants of this great steel corporation. Of these cases 1,682 were decided in favor of the men, 330 in favor of the management, 103 were withdrawn by the employees, 201 were compromised, and 49 are still pending. Not a strike was necessary in settling these controversies. Of these cases 1,182, or one-half of all the controversial matters, concerned the workers' economic interests. Wages, piecework, bonus, and tonnage schedules were the subjects of 570 cases harmoniously settled. If this isn't having a voice in management, I don't know what management is. Mr. Calder's comment is, "Rome was not built in a day; neither was the Bethlehem plant sold to the corporation's employes by a few fine gestures. Nevertheless, it has been thoroughly sold to 70,000 workers who remember the old days of 'catch 'em young, treat 'em rough, and tell 'em nothin'."

If this has been done with 70,000 men in the steel industry, it is at least conceivable that it might be done with 700,000 men in the coal industry. But I admit that the idea must be thoroughly sold to the operators as well as to the men before it will work.

Now, let me say that I am not attacking the trade union. The trade union, in spite of its extravagances, its unreason, and its acts of violence, has done more than any other one factor to improve the physical and, therefore, the mental and moral condition of the hand worker. It has done this either directly by its own power or indirectly by calling attention to abuses and to conditions, and thus getting public opinion back of law enactments. Those employers who use the term "open shop" simply for the sake of creating what is really a closed shop against the organization of hand workers are in a very real sense enemies of society. Where the Shop Committee Plan is a subterfuge to destroy the power of the hand worker to organize in self-protection, I am no advocate of it. Where the Shop Committee Plan is an honest attempt of men and managers to get together on a basis of mutual justice I believe it to be the most hopeful indication of the practical evolution of industrial democracy.

The Division of Industrial Cooperation of the American Mining Congress is making such an honest attempt. It has

recently announced a platform from which I ask your permission to read a significant passage, even if it is familiar to you:

"Future peace of industry will not be found in 'organized employers' and 'organized employees' that are created to fight each other. This has been tried for half a century and failed. There is a common ground upon which every employer and employee can meet, and this common ground is born of confidence and sustained through a recognition of interdependence. The mining industry needs the regenerating influence of reciprocal

relations between employer and employee. There is no other road to permanent industrial peace."

If the principles of industrial democracy thus enunciated by the American Mining Congress are in truth as "utterly worthless as a working proposition in this every-day world," then we shall have to go on fighting upon the present principle of grab all you can and keep all you grab until some great catastrophe like that which has overwhelmed Russia engulfs both capital and labor in a common ruin.

PROBLEMS OF MINE FOREMEN CONSIDERED

ANOTHER phase of the work of the Division of Industrial Cooperation of the American Mining Congress was presented to the Industrial Cooperation session on Tuesday morning, September 25, when a resolution was presented and adopted urging the division to appoint a committee to further the plans for the development of a more systematic training of mine foremen and other section executives in the coal, metal and other mining industries. The Division of Industrial Cooperation pointed out that in its survey of conditions in the mining industry, a majority reported that they considered the mine foremen the most important factor in the relationship existing between employer and employee and advocated that some method be adopted whereby these key men may be more fully informed as to the problems of the operator and at the same time instructed in the more practical application of mining methods, practice and equipment.

The resolution was referred to the Standardization Division, whose cooperation is sought in the working out of this plan, and to the general resolutions committee, which committee presented it to the general session of the convention, where it was adopted. The resolution is as follows:

WHEREAS, The American Mining Congress is vitally interested in bringing about industrial cooperation between workers and operators in the various branches of the mining industry; and

WHEREAS, The nature and the temper of labor relations are influenced and determined very largely by the mine foremen and other section executives, who

represent the management in all its daily relations with workers but who, although equipped with the necessary experience in the technique of their departments, have had little education in the policies of the industry or in the problems of labor leadership; and

WHEREAS, Systematic training of foremen and other sub-executives in methods of handling help and securing teamwork, in fundamentals of organization and management, and in the broader problems of the industry, has been in other industries an important factor in creating and in maintaining better industrial relations; and

WHEREAS, A number of representative operators from various parts of the country and representing different phases of the mining industry have urged the preparation and organization of such training in the mining industry through the joint cooperation of operators. Therefore, be it

Resolved, That a committee be appointed by the American Mining Congress to further plans for the development of more systematic training of mine foremen and other section executives in the coal, metal and other mining industries.

The plan as outlined proposes to prepare a course for mine foremen dealing with practical operating problems, economic problems and general operating problems in which the mine foreman is interested. The sponsors for this course will be made up from practical mine operators in both the coal and metal mining fields. The course will coordinate the best effort of the Standardization Division, the Industrial Cooperation Division and the Committee on Education of the American Mining Congress.

The movement promises to be a real step forward and to fill at the same time a long-felt need in mine management.

IMMIGRATION POTENT FACTOR IN NATIONAL DESTINY

HERE is much misconception and misunderstanding in the minds of our big business men on the subject of immigration from the standpoint of economics. I say that the question of cheap labor has no right to be mixed with the question of the destiny of this nation as a government and as a people.

There is no greater fallacy in the world than the thought of the big business men of America that bringing in a lot of imported refuse of the devastated nations of Europe (and I am referring to the period since the World War) is going to help the situation. During the fiscal year ending June 30, 1922, we received something in excess of 300,000 alien immigrants. About 200,000 aliens left the United States during the same period. A check-up showed an actual loss of over 16,000 men. Of course, economic conditions at that time brought about that queer result. Within the last six months, I will say since the 1st of January, 1923, we have received more desirable immigrants in America than in the ten years before that taken altogether. The great unemployment in the British Isles and in northern and western European countries generally is largely responsible for that.

A Dr. Sweeney recently gave the essential facts with reference to examinations of aliens in America for the draft. Of nearly 400,000 examined, men between the ages of 21 and 35, 46 percent showed a mental development of eleven years or less. It does not take much reasoning to convince you that there you have the makings for your poorhouses, your homes for the feeble-minded, your common jails, your soup houses, your insane asylums.

Business men are accustomed to figure carefully on what will yield quick dividends and what will build up for future days the remote dividends. When you import so-called cheap labor, you are loading your business with an overhead that will run for a century. In the final analysis every human being who does



By HONORABLE EDWARD J. HENNING
*Assistant U. S. Secretary of Labor**

not produce more than he costs to keep is a liability on business. Somebody must feed him and clothe him, and there is no place in the world to get the money from to do so except as an ultimate overneed of business, figure as you like.

One of the employment managers of, perhaps, the second largest employer in America, came in to see me six months ago raising the devil because, as he said, we were shutting the gates against common labor and industry was suffering. He said, "Throw down the bars."

I said to him that as a result of our restrictive laws, which laws are well known to steamship companies, foreign governments, and representatives of immigration societies, we are receiving a much better stock of aliens than we would under a wide-open policy. About 80 percent of our immigrants enter at the port of Ellis Island. Why not go there and watch the incoming stream and then come back to see me. He did as I suggested, and at the end of a week returned and said that what he saw dumbfounded him. He said, frankly, that there were not to exceed five men whom he could possibly use out of every one hundred aliens who entered. That means that for every producing factor who arrived at that time we were receiving twenty dependents.

I want to say to you, friends, that the cheapest labor you can employ is the labor that will produce the largest amount of asset value at the least cost, immediate and ultimate. The poor, dumb, semi-witted wage earner with a mental age of 11 years or less works only about nine years in a lifetime. He is short-lived as a producer. His labor requires a large overhead of supervision. The percentage of breakage and destroyed goods is appalling. The cheapest man in the end for you is the man who is born upon our soil, who is reared under the Stars and Stripes, who has had the equivalent of our common school education, or a year or two in your high school, who has learned a trade or craft, who knows what the spirit of this whole thing is, whose whole future and that of his family is tied up with this country and its success or failure, who owns a home or is trying to own one, and who is trying to rear a family. He produces more units of asset for the same amount of wages than any living wage earner, and he will work more years than anyone transplanted.

I want to say to you that I am for throwing down the bars on immigration

absolutely for men and women of the type who came a century ago, who came here for an opportunity to lead a broader and a richer life and a fair opportunity to lead that life. We have all the room in the world for brains and conscience and loyalty and sound minds in sound bodies. We are running the risk of being overloaded with strange metal in the melting pot. You mining men know something about smelting. There are some metals you cannot combine with others and you may spoil what you have in the pot by adding certain other metals, not to mention the danger of destroying the pot itself.

There is a national destiny involved in the matter of immigration. When we go back and study the rise and fall of nations, we assign all sorts of theories for their fall. In the final analysis there is but one cause, and that is alien invasion. Not invasion by enemy aliens, but friendly aliens, aliens coming from a lower civilization seeking to crowd into a higher and better one. Aliens coming gladly to be bootblacks and servants, but who gradually outnumber the original stock who created that civilization. Sometimes it required a century, sometimes ten centuries, but always the lower civilization wiped out the higher and a whole new civilization replaced the old. Always the pressure from the lower to the higher.

We stand for selective immigration based upon our needs and our best welfare, with annual enrollment of all aliens. We are "wide open" upon that basis. The countries of Europe refuse flatly to let us actually examine aliens in their countries. You read the sob stories of hardships. Every mail brings us many letters from good men and women all over the country abusing us like beggars and saying, "Why do you tolerate this awful thing of people leaving their homes and coming to Ellis Island and being turned back? Oh, what brutes you are!" They say, "Why do you not go to Europe and pass on them before they come?" To date, there isn't a country in Europe that would permit that for one moment. The proposition of examination abroad has often been before Congress. Always there was objection from the countries involved. They come and say to us, "You are invading the sovereignty of our country by proposing to come over there and saying who may leave our country." They intend to do the selecting themselves. The gentle art of "unloading" is as old as Europe, and they are not seeking to give us the flower of their manhood and womanhood.

* Delivered to twenty-sixth annual convention of the American Mining Congress.

We turned face about in our immigration policy in May, 1921. Up to that time we were the long-distance hand shakers of all the world; anyone who did not like his home could come to the United States regardless of why he didn't like it at home, and many of them were sent to us.

I have not discussed industrial relations so far at all, have I? Not except in the sense that the subjects of immigration and cheap labor do bear upon industrial relations. We have in the Department of Labor the Bureau, or Division, of Conciliation, where we seek to prevent strife in industry, and when the strike comes we try to help the parties to settle it. I think that is the most glorious Service of the Department of Labor. The essentially labor service of the department is in that function.

These representatives of labor and of capital come in and seat themselves at the long council table in the Secretary's office. Unless I happen to know them personally, I must ask them in turn, "Are you representing the million dollar corporation or the million wage earners?" They look alike, they dress alike, they are keen and snappy and up to snuff, they are the brightest and keenest in their line, they are Americans and they are as bright as lawyers, every one of them, whether they be employers or employees. I am proud of them as fellow Americans.

We speak ordinarily of the two parties to industry—capital and labor. As a matter of fact there are four. Industrial cooperation must be the cooperation of the four with each other. There is capital, there is management, there is the wage earner, and there is the public or the community.

Management is comparatively a new factor in industry, the product of big business. I should say that the men who operate the railroads in America today own probably less than 1 percent of the stock of the railroads. This new factor tends to complicate the situation and calls for a new type of trained men.

We do not want government ownership, but there is a government factor needed in industry for the protection of industry, and it must be considered in its rights. The war has taught us that there is nothing in government operation of things. The war has been the most powerful factor to give a turn to things away from the tendency toward socialism.

These are the factors in industry: Capital, management, labor, the public. How can we get them to cooperate? How can we balance them evenly? The answer to that question is the solution. When any one of these factors has the advantage, it tends to become autocratic.

That is the nature of power. Autocratic conduct always results in retribution. Capital has at times been autocratic. Because of its nature, it can readily be so. Labor has been known to be autocratic and has reaped evil results. When government becomes the controlling factor in industry, it, too, may become autocratic and usually does. Two nations in Europe are today reaping the whirlwind; one, because it has accentuated the governmental factor; the other, because labor has overplayed its hand. Capital is sinning more or less every-

that is due it; it wants its share at all times, both of emolument and of sacrifice. American labor is as loyal as any other American, and therefore we can compete with all the world.

I hear men complain because our high wages make it impossible to sell our goods in Europe. How are you going to sell anything to a bunch of paupers? Europe can't buy; it hasn't the money. Europe must produce by cheap labor because it hasn't anything to pay labor with. The greatest market in the world is the United States. Let us protect what we have and keep the rest of the world out of our market instead of trying to break into theirs. Still when it comes to open competition, the intelligent, loyal, efficient American workman, operating under the highly developed, efficient, industrial management of the United States, is capable of competing with any of them in the long run in an open, fair game.

What splendid proof of our industrial and national stability we recently had. On the 2nd of August, the world was appalled at the news that the President of the United States had died. Within twenty-four hours thereafter, at 9 o'clock the next evening, I was at the station in Washington as Acting Secretary of the Department of Labor when a train rolled in and out of it stepped a mild-mannered, modest-looking man, an ordinary citizen from all that was apparent, accompanied by a sweet-faced, sad-faced woman. They walked through an aisle of people out to an automobile and were driven down to the White House. Twenty-four hours before that this man was up on a farm in Vermont, living the life of a plain citizen, a simple country gentleman. Within those twenty-four hours there had shifted upon his shoulders the greatest responsibility that can rest on a human being. A President had died; another had taken his place, and not a jar in American industry. The tickers of commerce did not lose a tick; everything functioned just as though the greatest tragedy of our day had not occurred. That is the thing that makes me feel as an American that we are sound everywhere, industrially, economically, civically. The world knows no better man than the American citizen. President Coolidge is furnishing splendid evidence of that today.

It is better that you be a little short of men when you are at the peak than to have thousands of unemployed men walk the streets next winter. We are going into four or five years of sound, level, normal industrial prosperity—all of us together—you the mine owners, you the masters of business, we the workmen, all of us Americans, to the greater glory of our common country.

"There is no boom and the best information available indicates there will be no boom in industry.

"We have entered upon a period of solid and sound prosperity which promises to remain with us for many years to come.

"Two years ago more than five million wage earners in America vainly sought an opportunity to toil. Industry was at a low ebb. The employer suffered with the employee from the low-water mark in industry.

"Today, all hands are busy; every wheel is turning, every spindle is humming, and our furnace fires illumine the heavens.

"The most important subject for the immediate concern in the United States is industrial cooperation."

where in this regard. Management, however, probably holds the key as against the other three. A proper appreciation of the rights of the other three by each and an honest effort at fair cooperation will bring prosperity to all. Slowly, but surely, we are making progress in this great land of ours towards that ideal. The truth of the matter is that each wants only a square deal. That is all labor asks and capital wants no more. The public is willing to give and receive on that basis, and management can only succeed on that principle.

Labor doesn't want to know where you bank your money or who your lawyer is, but when you decide to purchase a stock of pick handles the judgment of the man who swings the pick as to the shape or form or type of handle is worth more than that of the manager or the owner. Labor just simply wants an intelligent consideration of the fact that it is in the game with you.

American labor is patriotic. I think the late war proved that it is. Labor carried its end most gloriously during that crisis. American labor wants all

COAL COMMISSION'S REPORT ON BITUMINOUS COAL

After Submitting Voluminous Preliminary Studies, It Reaches a Number of Conclusions Which Are Here Presented in Quotations from the Official Documents

THE report of the U. S. Coal Commission on the bituminous industry has been made public, the so-called final report being released as of September 24. This contained the major recommendations and is a fairly voluminous document, comprising some 14 pages.

Preliminary thereto had been published separate studies on (1) Civil Liberties; (2) Effect of Irregular Operation on the Unit Cost of Production; (3) Labor Relations, both as a summary of recommendations and as a full discussion; (4) Relief from Irregular Operation and Over-Development; (5) Safety in Bituminous Coal Mining; (6) Waste of Coal; (7) Earnings; (8) Wage Rates; (9) Labor Turnover; and (10) Description of Mining Population; Also Cost of Living; (11) Living Conditions; (12) Engineering and Management; (13) Wholesale and Retail Coal Trade; (14) Storage and Fuel Economy; (15) Purchase of Coal on Contract; (16) Cost of Production; and (17) Investments and Profits in the Bituminous Industry. It is then added that appendices on these and other subjects resulting from the commission's study will be later transmitted to Congress.

It is obvious that 17 separate studies, concluding with the final report of 14 pages, makes quite a voluminous document. The study on "Labor Relations" alone, occupies 77 pages. The study on "Relief from Irregular Operation and Over-Development" occupies 42 pages. Some of the other reports range from 50 to 60 pages or more. Any attempt, therefore, at a digest of these various reports in anything short of a volume is practically out of the question.

The report on "Wage Studies and Wage Rates in the Anthracite Industry," while listed as one of the subjects treated, has not been published. The same is true of the same report on bituminous.

The reports on "Earnings of Miners" in both anthracite and bituminous are, in the main, merely groupings in different ways of the earning capacity of men. These groupings are according to the amount of annual earnings. They start in with amounts so low as \$100 per year and less and rise so high as \$4,000 a year and more. The tabulations are, therefore, of interest only as showing the range of earning capacity of men working in the so-called unskilled class of labor in the anthracite and bituminous

field. The few who earn \$100 per year, or less, are, obviously, those who are on the pay rolls for relatively only a few days of the year, and for one reason or another disappear from the pay rolls. Those few who in the unskilled class earn \$4,000 a year, or more, are shown to have put in something in excess of the equivalent of slightly more than the 400 8-hour days in the year. In other words, by working overtime, on such positions

the facts and what does the commission recommend as the method of relieving the conditions as found.

The most complete statement of what the commission found in the industry is contained in the report of the engineering department. This report was written by C. E. Leshner, W. P. Ellis, W. M. Dake, Jr., and R. A. Walter of the engineering staff.

CAUSE OF SHORTAGES

The report of the engineers covers these various points:

1. "Widespread strikes and lack of railroad transportation to carry the peak load in times of extreme demand are the two factors that alone are responsible for the serious shortages of bituminous coal in this country that have several times occurred since 1915.

"There have been but two national strikes of the union coal miners, that of November and December, 1919, cutting off some 70 percent of the soft coal output; and that of the summer of 1922, affecting the bituminous coal fields to the same extent and shutting down the anthracite fields completely for about five months. * * * The strike of the mine workers is the only bar to the continuous production of bituminous coal at a rate considerably in excess of any present possibility of consumption. * * *

2. "The bituminous coal industry rests upon abundant, unmined reserves. The capacity in mines and mine labor is sufficient to produce at least 25 percent more than the highest rate attained in periods of peak demand, and if demand were spread evenly over the year, the over-development would be even more pronounced. * * *

3. "Local strikes increase the irregularity of operation and the cost of production, though with the surplus capacity they do not cause shortage of coal. Those affecting larger areas * * * likewise have not resulted in shortage or marked price inflation. * * * These field strikes, notably those in the Central Competitive Field, were potent factors in forcing the over-development of the soft coal fields, both union and non-union. The two national strikes had that effect in marked degree on the non-union fields.

4. "The bituminous coal industry is highly competitive. It is likely that if there never were any limitations on production imposed by lack of transportation, there would be little or no over-

"DOC" PARKER OF PHILADELPHIA,
DIRECTOR OF ANTHRACITE
BUREAU OF INFORMATION —



as those of a watchman, a pumpman, or something of that kind, they were able to do more than a year's work in a year.

This one particular study is reviewed thus briefly, not because it has any significance but because it illustrates the character of some of the reports to which very little attention is paid in this review. Such reports are valuable mostly for reference purposes and to indicate what might possibly be the net returns to a man who was slothful and to a man who was over-energetic. Also, such reports are significant only of the fact that where the rate per hour or per day is fixed by agreement, the earning capacity of the man is determined by the amount of time he spent at work.

In the whole list of documents, practically four only justify a review, the purpose of which is to show:

First—What are the facts about the industry.

Second—The facts considered, what are the opinions of the commission about

development because prices would never rise above the competitive level that obtains in periods of full car supply. Such a cure for the over-development of the soft coal industry and for high prices for coal would simply transfer to the railroad industry the over-development and necessarily increase freight rates. It is estimated that it would cost the railroads \$2,000,000,000 to build their facilities up to the point where they could carry the peak loads of coal. This would represent an average carrying charge alone, with interest at 6 percent, of 40 cents a ton on commercial shipments of bituminous coal. * * *

5. "The alternative is better use of the transportation facilities currently available. This means simply the more uniform movement of coal throughout the year. * * * The railroads must be expected to expand their coal carrying facilities in step with the expected increase in the nation's coal requirements, but they, in return, should not be permitted to dissipate their efforts in needlessly long hauls of coal.

6. "Operating to hinder the uniform purchase and movement of coal are the seasonal character of consumption and the fluctuations in consumption attending changes in industrial conditions. * * * A further factor, not so important as it was before 1917, is the national habit of buying soft coal as needed, instead of storage against future needs. * * *

7. "The consumption of coal is an independent factor. * * * It is obviously impracticable to legislate in the direction of forcing the uniform purchase and transportation of coal. The only remedy lies in furnishing an economic incentive to off-season purchase. * * *

8. "Industry is plainly able to forecast with considerable accuracy its purely seasonal fuel requirements, but not those variations attending marked business expansion and contraction. * * * But the concerted effort in this direction of equalized demand is the proper line of attack and the first steps are correcting those factors that have not only permitted but encouraged irregularity of demand. * * *

9. "Irregularity of demand * * * is the primary cause of present conditions. The habit bred and grew at a time when the development of the railroads was at least as advanced as that of the coal industry, if not more advanced.

"The fact of irregular demand due to seasonal consumption alone offered incentive for development of soft coal mines in excess of average requirements. * * * A decade ago the cost of opening and developing a soft coal mine was

small. * * * The railroads were anxious for the traffic. The periodic good market in fall and winter offered profits.

15. "Given substantial similarity in the grade and quality of coal * * * there is obvious economy in supplying that market with the coal nearest to it.

16. "The first will furnish the economic incentive for regular off-season purchase * * *. The second, by minimizing unnecessary and premature development, will operate in the same direction and at the same time accomplish savings in the cost of transportation."

In the main, the rest of this report is devoted to an elaboration and to proof of the assertions just made.

However, one paragraph, at the 25th page of the report, compares the days worked in the unionized and the non-union states for the period 1905 to 1914. It is tremendously enlightening as showing that the union states lost an average of more than a year due to strikes, whereas the non-union fields lost practically none. And, in addition, as showing that the union fields lost more time from other causes than the non-union states. The table, which tells its own story, is as follows:

WORKING TIME IN UNION AND NON-UNION STATES

Average time worked and lost, 1905-1914, a period including 5 "even years" of wage negotiations and 5 "odd years." Strike losses occur chiefly in the even years.

	Days Worked	Days Lost Account Strikes	Days Lost Oth'r Causes
United States:			
Arkansas ...	157	34	117
Illinois	189	25	94
Indiana	185	13	110
Iowa	211	8	89
Kansas	192	24	92
Missouri	186	24	98
Ohio	177	28	103
Oklahoma ...	179	28	101
Mixed:			
Pennsylvania	233	6	69
Non - union or open - shop states:			
Alabama	237	2	69
*Kentucky	201	2	105
Maryland	245	0	63
New Mexico.	253	0	55
Utah	254	0	54
Virginia	240	0	68
W. Virginia.	221	2	85

* Partly union.

CAUSES OF STRIKES

The report by Mr. Lesher and others shows from an engineering point of view that strikes were an important factor in the coal business. The commission itself made a separate study of the "Cause of Strikes." The essence of its finding on this subject is contained in the following quotations from the report:

The causes of strikes, as listed, are:

1. "Disputes as to what are * * * the civil rights of citizens. * * *."



H C ADAMS
OF CHICAGO -
PRES. OF THE
PEERLESS CO.
HELPED TO BOOST THE
ATTENDANCE BY
BRINGING A GOOD
SIZED CROWD OF
MEN ALONG FROM
THE SPRINGFIELD
DISTRICT.

10. "Among the more important of these factors contributing to over-development prior to 1916 * * * were periodic regular strikes in the organized fields. The most important and regular were those in the Central Competitive Field beginning April first every second year. Consumers, particularly the railroads, bought heavily in advance and stored coal to tide them over the strike. * * * In years when these strikes were of more than usual severity, the non-union fields were called in to meet added demand for coal; thus their over-development was promoted.

11. "In this manner the irregularity of production caused by seasonal demand, sectional stoppage of production, and local transportation shortages brought on over-development. To these causes are to be added the persistent seeking by railroads and by coal operators in the past 30 years for markets for the newly developing fields south of the Ohio River.

12. "Over-development has its evil consequences on the industry itself. It is the cause of the average short working year for the capital invested and for the mine worker. Both have come to expect and to demand a full year's wage for little more than two-thirds of a year's work. This is the waste, that profits neither the mine owner nor worker, that the public is called on to pay for as the cost of over-development.

13. "The consequences of over-development can be avoided only by removing * * * the causes * * *.

14. "The system under which coal cars are distributed to coal mines * * * should be changed to give first consideration to the commercial ability of the producer to sell coal rather than to ability to produce and load it * * *.

2. "Practical breach of these rights."

* * *

3. "The inappropriate application to present conditions of principles enunciated under totally different economic conditions."

4. "Attitudes of public opinion produced by ancient grievances."

5. "Lax administration of law"

* * *

6. "Unwise, even though lawful, interference of strangers in local conditions."

7. "The effect of universal suffrage upon law administration."

"All of these counties (those of West Virginia and Kentucky) * * * were almost exclusively peopled by mountaineers * * *. They were a law unto themselves. * * * The gun was the 'Supreme Court.' * * * The local traditions exert a dominating influence and account very largely for the outbreaks of violence.

* * * The racial traits and characteristics above described * * * is the real cause * * *.

"However much it may be and should be depreciated, the judgments of the courts and the verdicts of juries will speak the common conscience of the multitude over whom they preside. * * *.

"Principles of government acknowledged, admitted, have been tossed into the scrap heap every time they have faced actual conditions. The law has been, is now, and ever will be but the average of the judgment and conscience of the community.

"It (Williamson County) has more automobiles than any other county in the state save Cook. It has a certain lawless element and many feuds. It has more homicides than any other county in the state save Cook. It is intensely patriotic and had a fine record during the World War. Its people are intelligent, soft-spoken, extremely religious, not given to profanity, and would resent any suggestion that they were not good, patriotic American citizens. How can anyone account for the execration of such a county as this at the hands of the American people? * * *.

"When mining began in that county, it was upon a ruinously competitive basis. Profit was the sole object; and life and health of the employee was of no moment. Men worked in water half-way up to their knees, in gas-filled rooms, in unventilated mines. * * * There was no workmen's compensation law; accidents were frequent. * * * The average daily wage of the miner was \$1.25 to \$2. Then came the miners' union in 1898 and 1899. Peace and mutual respect have been the general rule since that time. The workmen's compensation law was enacted. Earnings advanced to \$7 and even to \$15 a

day. * * * They believe in the union for they think it brought them out of the land of bondage into the promised land. * * * But what they have of daily comfort they think comes from the union and not from the government.

* * *

* * * After they were shot down, two or three of them, who cried for water, had their throats cut. * * * One of them survived, and was able to tell afterwards how one of the mob expressed impatience at his tenacious hold

*Frank D. Rash,
who addressed
the convention
on Kentucky
Coal Problems*



on life, and, kneeling with one knee on his chest, he took the helpless man by the ear and twisted his head around so that he had easy access to his throat, which he then slit with a pocketknife. Nobody will ever know how many were killed; the best estimate is twenty-five.

* * * Then came into the equation an unknown quantity. * * * It was the storm of protest that swept through the public press of the country. * * * It presented the common aspect of a stranger interfering in a family row. The commission, of course, cannot say what might have been the result if public opinion had waited until the courts had either attempted or refused to discharge their duty. But the whole economic life of the county puts it beyond peradventure that when an indiscriminate assault on the union and the people of the county was made, it rendered the punishment of anybody impossible in that county.

* * * The promoter of the Southern Illinois Coal Company started to operate his mine in defiance of the union. He was inviting mob violence and flirting with death. * * * He challenged the supremacy of the union. Those in the mob undoubtedly believed that it was an attempt to return to old conditions before the mines had been unionized. * * *

"The condition resembles the conflict between the definition of the Declaration of Independence concerning human rights and the then clearly constitutional right of human slavery. * * * It was permitted to go on until the agony of a fraternal war solved the problem.

* * *

"The United Mine Workers of America have a right to exist. They have a right to collectively bargain as to wages and conditions. * * * In this clash of rights, every red-blooded American in the industry should yield as much as is necessary of his unqualified legal right to the end that the mining industry may be owned and worked by loyal citizens.

* * * And the fact that mining machinery and equipment were usually on leased ground are all-important factors in the situation. * * *

"The operator had to establish his business where the coal was and bring his labor to it. He had to construct houses * * *. He arranged for medical attendance and hospital service. * * * Thus * * * each mine * * * became a social center with no privately owned property except the mine, and no public places or public highways except the bed of the creek. These groups of villages dot the mountainsides, down the river valleys, and need only castles, drawbridges, and donjon-keeps to reproduce to the physical eye a view of feudal days. * * *

* * * There is here and there an impassable road, but, generally speaking, all the ground except the bed of the creek is privately owned, and a union organizer can scarcely move off the station grounds without becoming, technically, at least, a trespasser. * * * Actually, without the consent of the operators, a union organizer can do little more than ride on the train and look out of the window.

* * * The documents which pass for leases often give the companies complete control over the social life of the families who live in the houses owned by the company. * * * Self-respecting American citizens will find a way to put an end to them. * * * Self-respecting American miners, who have on other occasions shown themselves by no means contemptible defenders of their own interests, may prefer to take the remedy into their own hands. * * *

"That the election of officers by the people has something to do with the administration of justice cannot be denied.

* * *

"One of the evils of today in American life is government by discretion. The sooner we return to a government of laws and not of men, the sooner we may expect stability and peace.

"Operators rarely, if ever, reside at the mines. Managers and superintendents were the possessors of all the authority, both public and private."

LABOR RELATIONS

After dealing with the "Cause of Strikes," the commission then devotes a separate study to "Labor Relations." The essence of its report in that particular is contained in the following quotations:

"For many years conflicts between operators and miners have, intermittently, placed the coal supply in jeopardy.

"* * * Whatever the danger that may lurk in the possibility of a national strike, we believe that it is much more wholesome for the public to face and deal with those dangers squarely than to run the risk of having consecutive strikes in different territories.

"We believe the forces that make for acceptable service should be given opportunity to mould policy in the light of the commission's findings before the government considers so fundamental an experiment as taking over and operating the mines.

"The public is ready, through wisely constituted agencies, to render whatever aid it can.

"Ultimately, setting rates on a basis of mere trading strength must be supplemented by exact knowledge of work based on a scientific study of the elements of the jobs themselves.

"In order, however, that such choice by non-union workers (as between unions and freedom) may be made on the basis of an intelligent knowledge of the facts under the two conditions of operation, it is recommended that there should be continuing, compulsory collection and publicity concerning the essential facts of rates and rate changes in non-union fields by a permanent coal commission.

"* * * Stresses anew the great importance of more thorough-going attention to (1) the problem of irregularity of operation * * * (2) to exact definition of the conditions in the agreement under which machinery may be introduced; (3) the importance of a thorough-going study to determine the actual elements of a fair day's work for the miner * * *; (4) the importance in every district of adequately organized and properly functioning joint machinery to interpret such disputed points * * *; (5) the vital importance of good management and good union leadership.

"The commission, therefore, recommends legislation providing for regular accounting reports to be rendered by all companies whose product moves in inter-

state commerce, and further recommends that the agency to which the reports are rendered shall have the power to prescribe the form of accounts.

"It is recommended that equal publicity of union accounts should be required.

"One of the most constructive steps that has been taken by the bituminous operators collectively is the almost universal establishment in the union field of the office of 'labor commissioner.' A 'labor commissioner' is an official of an operators' association who corresponds to the higher union officials of the sub-district or district.

INFORMATION SERVICE

The American Mining Congress maintains a thoroughly equipped Information Service prepared to furnish information to subscribers concerning any governmental activity which relates to mining progress. It prepares and issues a daily bulletin carrying a condensed statement of Washington happenings which are of interest to mining men. It is prepared to reply to any inquiry concerning mining affairs in Washington and to supply such documents as are available for free distribution. This department furnishes a special contact which is of general value to members and of particular value to the organization in getting first-hand information as to possible congressional and administrative action.

"Obviously, a man charged with such heavy responsibility * * * must, to succeed, be the right man for the place. Such a man needs to be thoroughly conversant with the aims and methods of unions.

"Such an important position requires tact, wisdom, industrial experience and understanding of economics, firmness, sense of humor, knowledge of the psychology of the union and ability to work with others; only a very high grade person can handle such work successfully.

"* * * Operators can scarcely afford to depend upon ex-union officials for their viewpoint in industrial relations. Strategy that goes no further than mastering the other fellow's game will frequently be futile.

"Finally, it might create the office of national labor commissioner * * *.

"A trained specialist to present cases effectively before the joint board, the umpire or arbitrators or other interpretative agency.

"A more progressive policy of hiring than exists in many mines where men

hired are likely to be those who merely drift in.

"They seem to have left each side with a wholesome respect for the other's fighting ability that has made for peace and stability.

"The victory * * * resulted in unreasonableness and increased instability.

"There seems to be an aftermath of bitterness.

"The strike, although lost, led to the removal of grievances and a conscious attention to labor relations.

"* * * And as the agreements in the different fields expired at different times, there has been opportunity for a large number of such suspensions.

"During the war, however, adjustments in wages and hence new agreements were made in conjunction with the United States Fuel Administrator for the country as a whole. Hence from that time on the agreements in all the more important coal fields expired simultaneously and the strikes of 1919 and 1922 were practically nation-wide in their scope.

"The study * * * indicates that their (strikes) elimination is primarily a problem in administration on the part of the union and secondarily on the part of management and of the joint adjustment machinery.

"* * * The malign influence of unduly partisan propaganda.

"Later in this study we shall propose that the decision as to the membership in the union by those workers heretofore non-union should be made the unhampered choice of those workers * * * that such choice by non-union workers may be made on the basis of an intelligent knowledge * * * is recommended that there should be continuing, compulsory collection and publicity concerning the essential facts of rates and rate changes in the non-union fields by a permanent coal commission.

"In the union districts, the agreements usually contain some provision defining the 'right to discharge.'

"There are relatively few discharges in the older union fields and many operators contend that the discharge clause in the agreement is a dead letter * * *, discharge is about impossible. 'Not only do you have to have concrete evidence but you have to bring it around to the point where it would be absurd not to discharge the man.'

"What they (the non-union operators) * * * do not offer * * * is the same measure of permanent security for the employee as is offered by the union.

"The union, in the union fields, offers an opportunity for the worker to have something to say about the conditions

under which one lives his working life. * * * No objection could be raised to an operator attempting in a proper way to operate non-union * * *. Such a policy * * * assumes a willingness to allow the employees free choice in deciding the question of union membership and a willingness on the part of the operator to compete in the net total of standards—wages, hours, treatment, living conditions, etc.—with the unionized fields."

With apparently all these documents before it, the Coal Commission then issued its final report, from which the following extracts will indicate the reason for the action, the character of action proposed, and the final lodgment of power over the coal industry. This is all developed by the following quotations from that report:

"Every one of the 45 coal-producing districts in the United States, except the Michigan district, ships coal outside the state in which it is mined; * * * 300 miles of cars, loaded high with coal, is the measure of the daily output of the bituminous mines * * *.

"The present extensive and unrestrained interstate exchange of food-stuffs * * * is, itself, conditioned upon an unfailing supply of coal; the very lifeblood of interstate commerce.

* * * It happens that the railroads and the public utilities, themselves so clearly obligated to render whatever public service is demanded of them, that the constitutionality of their public regulation is unquestioned; are of all industries most dependent upon coal. * * * It is this indispensable service which the coal mine performs that gives a large social value * * * and, in turn, this social value, in effect, grants to the public an interest in that use and creates a compelling reason for public control.

"The commission is passing here upon an economic fact; and not upon the law.

"Those in the industry who have expressed their purpose to take the American people into their confidence * * * can offer no objection to legislation providing specifically for that kind of publicity.

"Pending the enactment by Congress of a law to provide for complete and compulsory publicity, this plan of voluntary reports * * * would thus bridge over the period between the close of the present commission's investigation and the beginning of the permanent system of fact finding.

* * * The commission recommends the use of powers of the federal government over interstate commerce.

* * * When it became necessary

to create a federal reserve system of banking, it was recognized that it could best be put into effect through the banking industry. The function of the government is that of supervision, with substantial powers of regulation. * * * This means drastic regulation, when necessary. * * * For those who will not, voluntarily, give the service on reasonable terms; but it means also a reasonable attitude * * * toward investors * * * and toward miners * * *.

"We believe that the logical and appropriate agency to exercise the necessary administrative and quasi-judicial functions required for the coal industry already exist in the Interstate Commerce Commission. We recommend the creation for this purpose of a special division in that commission.

"The regulation of commerce in coal among the several states involves the right to know the cost of its production, whether the investment * * * is fairly estimated or inflated, and what profits are made * * * and what are the earnings and working conditions of the miners.

"Pertinent information concerning costs, sales realization, margins of profit, wage rates, earnings of miners. Fact-finding service on a permanent and well-coordinated basis * * *. As to quality of coal in interstate commerce * * *. Publicity as to the costs and profits of the operators, the wholesalers and retailers * * *. Publicity as to the earnings, living conditions and living costs of the miner * * *. In times of emergency the proposed division of the Interstate Commerce Commission would be ready to act as federal fuel distributor.

"There should be some organic relation between the Interstate Commerce Commission * * * and the Geological Survey and other bureaus which already have experience and facilities for collecting any part of the information needed.

"This commission does not advocate publicity about private affairs, but it holds that the transportation of coal in interstate commerce is so affected with a public use * * * that there is no longer any private right to secrecy as to such matters as costs, profits, wage rates, and working and living conditions.

"The fundamental evil in the anthracite industry is that of monopoly. * * *

* * * The bituminous industry may thus be brought from its over-developed, unorganized and chaotic condition to one more nearly like that of the anthracite industry * * *.

"Reliance on competition without supervision has resulted in persistence of a permanent level of high prices * * * for anthracite.

"This would be done, however, under governmental supervision and therefore without the incidental anti-social policies which have created the special problems in the anthracite industry, elsewhere discussed.

"Limitations of margins * * * are perfectly reasonable demands of the public.

"One remedy * * * is the levy of a graded tax on royalties and differential profits.

"The main remedy * * * lies in the consumer himself. There are substitutes for hard coal.

"The fundamental evil is over-development, irregularity of operation * * *. This problem * * * can be solved by the federal government, in cooperation with the industry, working on a national scale with a clearly defined national policy. It is through the granting and withholding of transportation service through supervision that an equilibrium can be established between demand and output. The Interstate Commerce Commission * * * already has the responsibility for authorizing a railroad to put sidings * * *. The information should be utilized as a basis for determining whether at a given point and at a given time the public convenience and necessity do or do not demand further coal supplies.

"Already there is positive control of the distribution of bituminous coal * * * inherent in the freight rates.

"The most convenient and practicable * * * methods of exercising the right of control over the interstate commerce in coal would appear to be the licensing of all who desire to ship coal from one state to another or to buy and sell in interstate commerce * * *. Reasonable conditions, logically growing out of the inherent power of the government * * * would naturally be attached to the granting of the license and violation of them would be cause for suspending or revoking.

"Greater use of river transportation would help to get more coal to market with less coal cars. * * * Unfair competition on the part of the railroads, which can now be controlled * * *.

"Economy in the use of transportation also demands that the long haul of coal be no longer encouraged by favoring rates. * * * Gradually, and without undue violence to established conditions, the rates should be readjusted to re-establish more natural relations between the elements of cost and service which will make for economic zoning.

"The most promising method of attaining this end (correcting irregularity) is by giving a controlling influence to the commercial factor in the distribution of railroad cars * * *."

"The leading law should be amended to give the Secretary of the Interior full discretion to make his approval of the opening of a new coal mine on the public domain contingent on the showing before the Interstate Commerce Commission that such a mine would serve the public * * *."

"We look forward to the working out under federal supervision of a national policy * * *. This would include * * * limitation of marketing area by the adjustment of freight rates * * * with a voluntary division of territory on economic lines * * * the consolidation of mining companies. The consolidation, grouping, or pooling of bituminous mining operations should be not only permitted but encouraged.

"It is the function of each community by licensing retail coal dealers, by organizing cooperative associations, by establishing municipal fuel yards * * * to take the necessary steps that * * * the distribution thereof is made to the consumer upon a fair and equitable profit."

MINT SERVICE

THE mint service will shortly have a new director, owing to the retirement of F. E. Scobey. Mr. Scobey has been director since early in 1921 and resigned early in September, subject to acceptance at the pleasure of President Coolidge, to return to his extensive private business interests, which he had temporarily laid aside to serve President Harding, the two being old friends. Mr. Scobey's successor has not yet been appointed, but he is likely to be Melville Gillette, a mining man of Nevada, who has been endorsed for the place by Senator Oddie of Nevada and others.

Interest has centered on the mint service of late in connection with charges that it does not observe the eight-hour day in its coinage plants. Protest has been made against non-observance of the eight-hour day at the Philadelphia mint by organizations in behalf of the workers. The Mint Bureau explains that the situation is due to the fact that the government's coinage requirements must be met irrespective of the length of operating time, and that it has never been unusual for the mints to work more than eight hours per day when occasion demands.

In two years the Department of the Interior has issued 110,330 patents by which the ownership of 23,022,630 acres of public lands has been transferred to homesteaders.

PROGRESS OF STANDARDIZATION IN THE UNITED STATES

By COL. WARREN R. ROBERTS *

Chairman General Committee, Coal Mining Branch of the Standardization Division, American Mining Congress

(Concluded from September issue)

IMMEDIATELY after the World War the American Mining Congress established a division of standardization. This division was divided into two main branches, one branch representing the metal mining industry and the other the coal mining industry. Each branch carries on its work in standardization through committees covering certain definite classifications of work, such as mine ventilation, mine drainage, mine timbering, underground power transmission, underground transportation, power equipment, mechanical loading underground, fire-fighting equipment, drilling machines and drilled steel, steam shovel equipment, outside coal handling equipment, milling and smelting practices and equipment, methods of mine sampling, mine accounting, and so forth.

These committees are composed of consulting mining engineers, representatives from operating mining companies and manufacturers of mining machinery and equipment and all recommendations made by the committees must have the approval of such joint representation.

The standardization division holds an annual standardization conference in conjunction with the annual convention of the American Mining Congress.

The standardization division each year, after the National Standardization Conference, issues a Standardization Bulletin embodying the reports of all the above-mentioned committees as submitted at the standardization conference and as approved by such conference for adoption.

The standardization division has representation on the mining correlating committee created by the American Engineering Standards Committee for reviewing all recommendations for standards for the mining industry, by any and all societies and organizations carrying on standardization work for this industry. This committee has, at the present time, under consideration several reports from committees of the standardization division, and it is hoped at an early date to secure the recommendation of this committee for the approval of these reports by the American Engineering Standards Committee, as tentative American standards.

The Standardization Division also have representatives on various sectional committees created by the American En-

gineering Standards Committee for reviewing recommended standards offered by various bodies carrying on standardization work for the mining industry.

Heating and Piping Contractors' National Association: The secretary has rendered me a report from which I quote the following:

"Our committee on standardization cooperating with the American Society of Mechanical Engineers and with a committee of manufacturers was responsible for the adoption of the 1915 U. S. standard for flanges and flanged fittings. Our committee has also devoted considerable of its time to a study of the methods of keeping accounts in the heating and piping contractors' offices and have devised a complete system of forms for use in this accounting work.

"The committee has also given the association a standard set of conditions to accompany proposals. At the present time, the committee is working on a standard method of computing heat losses and quantities of radiation and also on the standardization of roughing-in dimensions of return line valves for vacuum systems.

"Furthermore, the association is cooperating with the American Engineering Standards Committee through representatives upon several of their sectional committees which are studying subjects of vital interest to our industry.

"The association is acting as a joint sponsor with the American Society of Mechanical Engineers and committee of manufacturers on standardization of fittings and valves for the work on standardizing pipe flanges and fittings. This committee has already submitted to the sponsor bodies the proposed standard for malleable iron screwed fittings and is now considering the report of subcommittees on flanges, flanged fittings and their bolting for 125 and 250-pound pressure and cast steel flanges, flanged fittings and their bolting for 400-pound steam working pressure."

A press release of the Department of the Interior says that it now supervises between thirty million and forty million acres of public coal lands through fifteen states into which are opened over 100 mines. In addition the government has one phosphate lease, one oil shale release, and four potash leases on public lands. The declaration at the beginning is that the United States is one of the largest coal land owners in the world.

*President, Roberts & Schaefer Co., Wrigley Building, Chicago, Ill.

COAL ILLS DIAGNOSED BY MANY DELEGATES

GOVERNMENTALITIS" was the term applied to the cause of most of the ills of the anthracite coal industry by E. W. Parker, Director of the Anthracite Bureau of Information, Philadelphia, Pa., in his address before the twenty-sixth annual convention of the American Mining Congress. With respect to the future of the anthracite industry he said that there is no way of judging the future but by the past, and that judging by the past there has been little in the attitude of the government, either state or federal, toward the coal industry to justify the hopes with which anthracite operators have solaced themselves and their stockholders.

After pointing out many discrepancies in the reports of the United States Coal Commission and inconsistencies in the Commission's recommendations, Mr. Parker suggested that the effect of the Commission's conclusions would be to penalize efficiency and reward inefficiency in the anthracite industry. Mr. Parker's views concerning the Pinchot settlement were in part as follows:

"In the settlement by the Governor of Pennsylvania, one of the few constructive suggestions that has been made for the anthracite industry by the United States Coal Commission was entirely ignored. In the Index published by the New York Trust Company in New York, in its issue for September, it says only one thing is really settled by Governor Pinchot's action in the anthracite industry and that is that the public will be called upon to pay higher prices for domestic coal this winter. The governor either overlooked or ignored an opportunity for exceptional public service and bringing about a settlement which would have dealt with fundamentals and resulted in an agreement carrying with it some degree of stability for the future. After a few days' study (the anthracite operators and the United Mine Workers of America have been struggling with this proposition for three or four months) of what he admitted as a very complicated business, Governor Pinchot made four suggestions for settling the strike. The principal one of these, from a public viewpoint, was that the miners be given a 10 percent increase in wages. It is difficult to understand how the governor arrived at this conclusion.

"For nearly a year the United States Coal Commission has been making a study of the matter, and one of the few conclusive statements contained in its several anthracite reports was that the wages paid the mine workers were ample to insure a reasonable and comfortable standard of living. In the face of this and of unanimous agreement that prices

of anthracite were already too high, Governor Pinchot proposed further to increase prices by adding a wage increase, which he figured would raise the labor cost of producing coal 60 cents a ton. Then he proposed that the operator should absorb 10 cents and the remainder be made up in reduction of transportation and distribution so that eventually none of the increase would fall on the consumer. He was told by the anthracite operators, and we figured it out

a million dollars going to the state shall be remitted to those consumers.

"There are high costs and low costs of operation; there are high realizations and there are low realizations, and there are mediums in both among the anthracite industry. It happens that a great many of the companies that have low operating costs also have high realization.

"Now, just a word as to the future of the industry. S. D. Warriner, of the committee of the anthracite operators, has stated on one or two occasions lately that there is really only one asset that the anthracite industry has and that is the anthracite consuming habit. Householders who are accustomed to the cleanly fuel, the uniform temperature which it maintains and its long sustained combustion, are averse to changing to other fuels. They want anthracite. It is the anthracite consuming habit. But that can not continue in the face of this constantly increasing price. The anthracite operators, like all other companies engaged in industrial enterprises, have got to earn an interest on their investment and can not be expected to do their business at a loss. They are obliged to charge prices which will enable them to continue to produce, not only the low cost and the high realization companies, but also a high cost and the low realization companies, because at the present time every ton of coal that the anthracite mines can produce is needed for the public consumption.

"The tonnage can not be materially increased. As I stated, we have by pressing production during the period since the strike of last year increased the monthly shipments about 10 percent, but that is the limit. The deposits have been thoroughly exploited; there is not enough new tonnage to be expected that will overcome the mines that are being exhausted in some districts. The bonanza beds of the anthracite region have been practically exhausted. In order to meet the demand of the public the operations are now carried on in thinner, deeper and more impure beds than those of 25, 30 or 40 years ago.

"When we look into the future of this great industry—great now, of course, but it is one which is at its prime of life, not many years before the period of decline will begin and old age will overtake it—it is not an industry which for the future presents a rosy hue."

A. B. Jessup, of the Jedd-O-Markle Coal Company, of Jedd-O, Pa., addressed the convention at some length on the problems of the anthracite industry. He said that the problems of the anthracite and

MAJOR PROBLEM OF COAL

J. G. Brydon, president of the National Coal Association, in his address to the Twenty-sixth Annual Convention of the American Mining Congress, asserted that the major problem of the coal mining industry is labor relations. Among the reasons ascribed by Mr. Brydon for the high cost of bituminous coal mining were:

The unskilled worker, with his daily average pay of \$3.35, and the skilled worker, with his average of \$4.73, pay the \$8.83 daily average of the unskilled coal miner.

Strikes in violation of contract.
Opposition to the introduction of labor-saving machinery.

Limitation on the number of cars a man may load a day.

Restrictions on working time.

Voluntary absenteeism.

Interference with management charge and curtailment of right of discharge.

Rigid classification of work.

Extra high wage rates for operation of labor-saving machinery.

Mr. Brydon's address will be printed in full in pamphlet form, and will be available for distribution about October 15.

very closely, that the average was not 60 cents but 70 cents on the prices of coal upon which that increased cost would have to be allocated.

"In addition to that, the reduction in the working time was granted, had been conceded by the operators, and also the increase in the tax which the state elects on the value of anthracite added 5 cents more a ton to the increased cost, and I want to say that while the governor has expressed a great deal of solicitation, has asked for a conference of governors to see that there shall be no extortion from the people of the prices of anthracite for the consumption by the retailers, he has not suggested that the increased tax which will amount to half

bituminous industries are alike to the extent that both have to contend with the limitation-of-output-per-man rule, the opposition to the introduction of labor-saving devices and machinery, and the general difficulties encountered as the result of union domination. With respect to the union, Mr. Jessup said in part:

"The union exists with us only for the purpose of making general wage agreements running over a year or two, and then after the agreement is signed practically forgetting all about the terms of the agreement except those which impose a high wage scale and other things favorable to them, and they continually apply during the term of the agreement a process which I think some French gentlemen designated as nibbling; they cease dickering with the industry as a whole and try by their economic force to pry off something more from each individual company, and they are continually going upward in wages and working conditions and everything that tends for increased cost. At the same time they are opposing all of the methods of efficiency and there is no industrial cooperation so far as I can see on their part. Their policy has been destructive, not constructive in any sense."

According to Mr. Jessup, if the anthracite industry could have 12 months or more of uninterrupted operations most of its problems would be solved except perhaps the question of labor. He said that while the Coal Commission reported that there were 200,000 men in the bituminous industry who were not needed, the anthracite industry needs 25,000 to 30,000 men and is not able to get them.

"We are not trying to get cheap labor," said Mr. Jessup, "those men would receive approximately \$6 per day under the new wage scale and it is a remarkable thing that the class of labor we are short of is the contract miner's labor. We are short of the only man whom we do not directly employ; he is an employee of the contract miner and evidently the contract miner is a hard taskmaster, because in spite of the wage being higher than that of the average man, we are short from 20,000 to 30,000 of these men continuously.

"The source of this supply has always been through immigration. I believe there is no other industry in the country where a raw immigrant can by two years' apprenticeship not only learn the English language, but can become a skilled workman earning on an average

of about \$9 a day at the present wage scale, with the possibility of earning as high as \$15 a day as a maximum. But we are not able to get them, and American-born men in our region prefer to engage in other occupations."

In commenting upon the problems of the coal industry in the Western Kentucky District, F. D. Rash, of the St. Bernard Mining Company, Earlington, Ky., in his address before the twenty-sixth annual convention of the American Mining Congress, stated that there were three conditions which must be remedied before coal mining in that district could be made profitable. First, over-production resulting from the over-development of a territory about which are placed the apparently insurmountable barriers of unfavorable freight rate differentials. Second, the high wage scale in the district that returns to the unskilled mine worker on the tipple over twice the wage paid to the unskilled man of equal intelligence and physique working a stone's throw away on the railroad or in the factory. Third, with either one or both of the foregoing conditions temporarily dormant or inoperative, apparently favorable prospects have been blighted by recurrent car shortages.

Mr. Rash said that the closed mines of the district are mute but convincing evidence of the fact that management is not successful in holding production costs below sales prices; that a wage scale which operates directly to deprive the miner of work by boosting production costs to such high levels that former natural markets have been lost to other fields with lower wage rates and higher earnings to the individual miner, is economically unsound; and that inability to supply the requirements of long established connections, to say nothing of attention to prospective new customers, due to car shortages, brings about untold losses both in earnings and good will.

Mr. Rash called attention to the vicious practice on the part of demagogues of originating and propagating misleading information concerning the country's basic industry of coal mining, and cited many instances of false reports regarding coal mining operations which have served to cloud important issues in the minds of the American public. He suggested that the coal industry should continue to devote itself earnestly and whole-heartedly to the presentation of facts which will quickly dispel the cloud of odium which hangs over the industry as the result of misinformation and which will place the coal mining business on the same plane with other worthy industries serving the nation.

George Wolfe, Secretary, Winding Gulf Operators' Association, of West Virginia, in his address said that the coal people in southern West Virginia that operate non-union mines have been subjected to violent attacks for the past twenty-five years. He said that when the United States Coal Commission was formed it was a fifty-fifty proposition as to whether or not the furnishing of information to the Commission would result in any benefit, but that by close margin the majority tonnage prevailed and the Winding Gulf operators gave to the Commission all facts that they requested. "We feel in a number of instances," said Mr. Wolfe, "that we could well write a polite letter to the Coal Commission and ask them to return to us our data in the original packages in which they were forwarded. From the results of the Commission's findings, we feel quite sure that in many instances they have never opened or read the communications that we have sent them.

"As to the ultimate findings of the Commission as applied to the district of West Virginia from which I come, I doubt if our people will accept the recommendations as to government regulation, the shutting down of development and those phases of the control of our business which the government Commission have recommended, without a trial in the courts. As to the appointing of a body of men who know nothing about the coal industry as a new department in our government to regulate our affairs, I doubt if our people will acquiesce.

"One of the greatest troubles of production that we people in southern West Virginia are suffering under is our inability to bring back our foreign markets. Prior to the war we exported a large tonnage of coal to Europe and South America, but through increases of freight rates and increased cost of production, and due to high wages, we are no longer able to compete and we are not able to find a way to ship our entire production. Naturally, that causes a loss of profits and slowing down of tonnage and trouble at home. Whether in the future freight rates can be so adjusted or wages adjusted so that we can again enter the foreign markets is a matter that remains to be seen.

"We feel that our position in southern West Virginia with reference to labor conditions is sound. We have demonstrated to the public during the period of the war, the national strike of 1919 and the last strike of 1922, that we were able to run our properties and produce a full tonnage for the benefit of the people of our nation, and we hope to be able to maintain that position, realizing, however, that we have a fight constantly on our hands."

ADHERENCE TO CONSTITUTION WILL SOLVE COAL PROBLEM

*Problem of Central Competitive Field and Entire Coal Industry Can Be Solved
by Revival of 100 Percent Americanism*

BY PHIL. H. PENNA, Secretary Indiana Bituminous Coal Operators' Association*

THERE isn't anybody in the world that has a right to answer the question, "What is the position of the operators in the Central Competitive Fields?" I do not suppose there are any two of them that would agree as to just what their position was on any proposition.

There are some few things that perhaps we could get a majority vote on. One is that we have been deprived of control of the coal industry that we supposed we owned and operated. I think we could perhaps all agree or come close to agreeing on that. I think further that the operators of the Central Competitive Field are wedded, even assuming that they are free to act as they were once, in the exercises of that freedom adopted by the collective bargaining method of doing business with the mine workers. I think under similar conditions they would reaffirm their previous determinations on that attitude.

It has been tried and under fair conditions was successful, more so than its friends anticipated or expected, and yet far from being perfect. The coal operators and the coal miners and the American public were beneficiaries of what is now known as the collective bargaining method which was effective in the Central Competitive District of this country and to the extent that it was able to influence surroundings outside of the Central Competitive District.

The trouble now, is not with collective bargaining. The trouble is that the mine workers of America learned of their ability to control truculent politicians, public faddists, damnable upholders who have never been able to uplift themselves, but spend their lives in meddling with other people's business, until collective bargaining is nonexistent; there is no such thing.

I ran across the other day in my office a whole lot of sales contracts made by Indiana operators to their customers all over the country. There are probably 300 such contracts. They were made in the year 1916, effective from April 1, 1916, to April 1, 1917. One dollar and thirty cents for lump coal was the highest price named in any contract. Screenings were down to 80 and 85 cents per ton. There was just about an average of \$1 per ton for mine run. Please get those dates—effective from April 1,

1916, to April 1, 1917. That was when the operators and the miners did their own business, made their own contracts, collective bargaining in effect and force, and then what? The miners learned that what "we can't get from coal operators we can get from politicians in Washington," and they demanded and received anything that they demanded. Since that time the operators have not been



Phil H. Penna

controlling their industry; since that time there has been no collective bargaining.

Our problem is a serious problem not easy of solution. I was glad last night to hear Dr. Abbott come awfully close to telling the truth. I think he told it as far as he knows it, and he comes mighty nearly knowing it. You recall what he said about that open shop proposition. "There ain't no such animal," closed to union or closed to non-union. The only consistent operators today are those of West Virginia, Alabama, Kentucky, Tennessee and anywhere else where they demand, come out in the open and say, there shall be no union and if you work for them you work on the condition that you will not join a union and if you do join a union you will quit and get out. That attitude has the quality of being fruitful, square up and straight out.

You people know, of course, that there is just as great a diversity among the make-up of coal operators as there is among any other classes of people—diversity mentally and physically.

We have men that have a respect for the rights of their neighbors and respect

for their own rights, and those men will always fight. They assess a value on their rights and they will protect those rights and the value they are to attach as a farmer would protect a fence line or as you would protect your home from an attack. A right is a real thing with them. Humanity has fought for the protection of those rights and there are some men today yet who talk about rights and to them they are concrete things, *concrete*, and they will fight for their protection. Whenever you find a coal operator of that kind you will find him just as considerate of the rights of the other fellow, no matter whether he is working man or an associate, and if industry was made up of those people always there would be less trouble.

We have lots of other people whose only measure of life is the glimmer of a dollar in the distance way, way back there, not the dollar, you know, they won't want the dollar, but just see the glimmer of the thing back there! Rights dwindle into insignificance, they have no value to them; they will not fight for the protection of their own rights, they do not respect the rights of their laboring men, and hence the necessity for a labor union.

Put a man down in Washington and that means in all of the places in Washington, especially the high, with enough courage to say "The Constitution of the United States is going to be enforced. We recognize your right, Mr. Working Man, to unionize for purposes of collective bargaining and for any other legitimate purpose that you desire.

"We recognize your strike, your right to work or refuse to work, and we will protect you in that right. The Constitution also recognizes the same right of a man to persist in working as there exists in the other fellow not to work and we are going to protect every man that wants to work in any legitimate pursuit." That is Americanism, and if you will do that we do not care anything about the faddists, we do not care about socialism in high places, we do not care about the cure-alls and the upholders; we can dispense with all of them. The right to work is sacred, just as sacred as the right not to work.

That is the only cure necessary. It is not a complicated question; it is a matter of patriotism and loyalty to the constitutional laws of our country and to true hundred percent Americanism.

* Address delivered to 26th Annual Convention, American Mining Congress.

INDUSTRIAL COOPERATION IS PRACTICAL

*Labor Relations Discussed at All Sessions of Convention—Program of Division
Endorsed*

INDUSTRIAL cooperation was the major theme of the discussions at the twenty-sixth annual convention of the American Mining Congress at Milwaukee, Wis., September 24 to 29. Two general sessions of the convention were devoted entirely to the discussion of this subject and in practically every address delivered to the convention the importance of labor relations in the mining industry was emphasized.

At the Tuesday morning session, September 25, W. A. Grieves, national chairman of the Industrial Cooperation Division of the American Mining Congress, outlined the progress of the work of that division during the past year. In part Mr. Grieves said:

"The mining industry presents difficulties that are not found in any other field, but there is no impractical idealism in the minds of those undertaking the work that this division is attempting to perform, and we are determined to do our part in bringing about greater harmony between the principles responsible for the successful operation of the country's most basic industry. We realize that there is much loose thinking, a confusion of ideas and no end to the panaceas and doctrines that are being foisted upon industry as cure-alls for our many industrial difficulties.

"The operator in the main has not been soured against so-called industrial relations. His mind is open. Being a practical man, he is ready to consider any sensible plan that will make things better. People as a whole have an entirely erroneous conception of industrial relations in the mining industry. The great difficulty has been that the public has not had the facts. The personal interests of those whose living is made by causing discontent have dominated. These agitators have lost no opportunity of getting their vicious and untruthful stories to the public.

"It is dangerous to find out how little



the public knows about the actual conditions of our mines. To the average citizen, the miner has the most undesirable, uninviting, extra-hazardous, soul-subduing work in the world. It is satisfying to observe just what is really being done by operators, and upon investigation it is quite apparent that in an industry where there is 50 percent more workers than are needed, it is not likely that the job is so deplorably bad as it is held up to be."

Mr. Grieves gave as the basic principles underlying industrial cooperation five major factors:

1. Personal contact.
2. Working conditions.
3. Employees' representation.
4. Rewards for increased efficiency.
5. Community conditions.

Norman Schlichter, formerly labor relations man for the Y. M. C. A. of America, pointed out that one of the weak links in industrial relations matters was the lack of education and the unsound doctrine that is taught along sociological lines by the numerous universities. In part, Mr. Schlichter said:

"It is a fad now for college students to sit off in clusters in the library and settle the problems of the mining industry. We have two American publics. We have that rapidly developing public

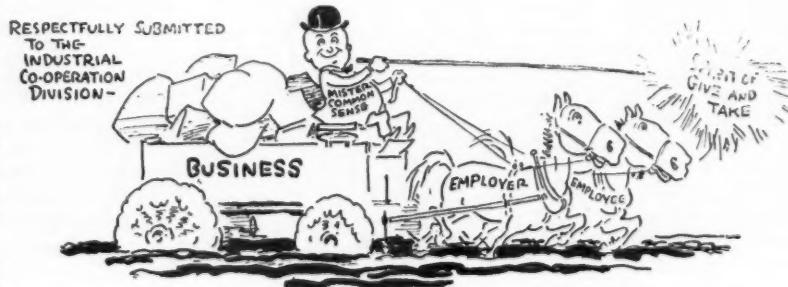
that believes that nine-tenths of everything in industrial management is all wrong and that only one-tenth of the other side of industrial organization is right. And we have the public that believes in the Stars and Stripes, the principles of Abraham Lincoln and the Constitution of the United States—that is the real American public.

"One of the fundamental problems of industrial management is how to keep this first American public from developing so rapidly and how to convert to true American principles that public. There are three fundamentals that are essential to industrial management. They are common confidence, common honesty and common sense.

"The mining industry, as well as other industrial managements, is increasingly practicing these three things. Industrial management must increasingly undertake to educate labor in the fundamental problems surrounding the mining industry. You can not do a better thing than to keep insisting that mining management ought to be better all the time and keep informing the public about the truths of the industry as it exists."

At the industrial cooperation dinner, Dr. Lawrence F. Abbott, Outlook Company; Hon. Edward J. Henning, Assistant Secretary of Labor; and Sidney J. Jennings, president of the American Mining Congress, delivered addresses upon this important subject. These are found in full in this issue of the MINING CONGRESS JOURNAL.

The work of the Industrial Cooperation Division of the American Mining Congress will continue throughout the coming year with renewed interest and energy. The Division hopes during the coming year to fully organize every state and to submit at the next annual convention a more extended report as to mining conditions, both in the coal and metal industries of the country.



INDUSTRIAL ISSUES IN THE COAL FIELD

By GEO. H. CUSHING

TWO more attempts have just been made to remove the strained relations between labor and capital in the coal fields. As a result, the situation is more complex than it was before. The attempts include Governor Pinchot's arbitration of the anthracite strike, the Coal Commission's reports on the "Cause of Strikes" and "Labor Relations." The obvious reason why both attempts failed was because they did not go to the root of the matter. The real causes of discord are:

First—The rising price of coal due to labor cost is acting as an embargo on its use, or it is threatening such a revolution in the transmission of power as will change completely the character and program of the industry.

Second—The demands of the union, augmented by the ambitions of the bureaus, would, if satisfied, result in a transfer of management from the hands of responsible owners to those who have no responsibility for the success of the enterprise. Those who propose the change are, in the first instance, merely looking to their own incomes, and in the second instance are seeking only to impress certain social reforms upon a commercial enterprise.

When the struggle between the operators and the coalition of unions and bureaus is seen in this light, it becomes obvious that the operators, driven by the law of self-preservation, must fight the issues through. Because this brings into play the greatest force that has ever actuated human nature, these attempted solutions must be studied, briefly, in detail. The one which first challenges attention is the Pinchot settlement of the anthracite strike.

The outstanding fact in the anthracite industry at the time of the Pinchot conference was: The anthracite operators were paying, as a labor cost of production, an amount that was 250 per cent of what it was a decade ago. There is a lot of quibbling as to whether this increased cost was caused by the working out of the thicker and easier-mined seams and the need, now, to work the thinner seams, or whether it was caused by the tendency of the miners to shirk their work. It is entirely possible that both causes might have contributed something to the result. But, whatever the cause, we stand facing the stubborn fact that the anthracite operators' labor cost was practically 250 per cent of what it was ten years ago. Since business is not an eleemosynary institution, and since the anthracite industry is not en-

dowed for charitable purposes, the other stubborn fact is that this cost was and is being paid by the users of anthracite.

Anthracite is a source of power. Forty to fifty per cent of it is produced and sold for the generation of power. Power can be and is generated in any one of many other ways—the running of water; the ebb and flow of tides; the combustion of bituminous coal; the burning of oil; the explosion of gasoline; the burning of wood, or the use of anything else which will cause a chemical reaction. If anthracite—no matter what its convenience—is so high-priced that the cost of a thousand pounds of steam or a kilowatt hour of electricity becomes too high, the consumers will turn to some other source of power.

Also, anthracite is a cold-storage warehouse for heat units—as anomalous as that may sound. It is the liberation of these heat units which brings comfort to the home. What the people want is the liberation of heat units to produce the desired comfort in cold weather. Heat is not a commodity; it is a condition of the air. That condition of the air is a result, usually, of friction; of resistance. Scientifically, it is the result of vibration. The same effect can be produced in any one of many ways. Therefore, any one of many substitutes can be used for anthracite in the generation of what we call heat. All that is needed to bring these substitutes into use is the proper incentive to inventive genius. The incentive which has always driven the human race has been either a desire to save the money which one already has, or to make additional money. If the price of anthracite rises, therefore, beyond a certain level, the human mind will be prodded to find the substitute for the anthracite coal, in order to save his money.

These are two problems which confront the anthracite operators when they demand reasonable terms for their men. They have no desire to oppress their workers; they are but trying to preserve their business from destruction at the hands of competitive forces. That explains something of the bitterness which attended the Pinchot interference with the proper settlement of this wage dispute. He was at the head of the political power of the State of Pennsylvania. It was in that state that all the mines were located. It was in that state that all the miners and operators involved had their residences. The whole transaction, therefore, came under the police powers of the state. Mr. Pinchot,

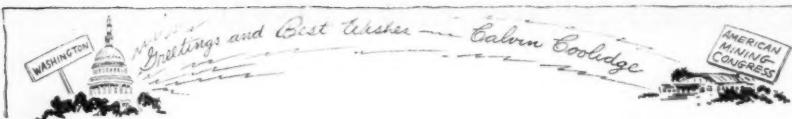
by exercising his police powers, could call a halt on an industrial dispute that was likely to stop the production of anthracite. That far he could and did go. His solution of this question was to grant concession to the men. He admits that this will mean an increase in the price, of prepared sizes, of 60 cents a ton. The operators say it will mean an increase of 75 cents a ton; some operators have already translated it into an increase of 90 cents a ton.

It is admitted that Governor Pinchot was acting within his power, within his own domain. However, the great body of consumers of anthracite are beyond the reach of the police power of Pennsylvania. Therefore he could compel the miners and operators to settle the strike on his terms, but he can not compel a single user of anthracite outside the State of Pennsylvania to buy, pay for, and use, a single pound of coal produced under those terms. The users are still free agents. They can take that coal or leave it alone. They can generate heat and power with it, or they can turn to any one of dozens of substitutes. Easily they may do what Chicago did ten years ago—go into an intensive study of fuel engineering and learn to burn, successfully and cleanly, other kinds of coal. And the rising price which Governor Pinchot dictated for the industry put that incentive into the mind of every man who, heretofore, has used anthracite.

The bitterness which attended the Pinchot settlement is, therefore, explained on natural grounds. He arbitrated the dispute in favor of the miners and placed in jeopardy the commodity which they produce. If there shall be any resistance, therefore, to the Pinchot idea, it must be set down as the struggle of men to preserve the industry from destruction.

We come, now, to the second proposition—the desire to transfer the management of the coal industry from the hands of responsible owners to the hands of others. An outstanding member of the staff of the United States Coal Commission said quite correctly, and more than a year ago, that the coal industry must be controlled by one of three forces—the men who have their money invested in it; the miners who supply the labor necessary to its production; or the Government, which supplies the police power to protect the property of the investor and the skill of the craftsman.

The theory of mankind for several thousand years up to now has been that



Mr. Sidney J. Jennings
President, The American Mining Congress
Washington, D. C.

Dear Mr. Jennings:

"The annual Convention and Exposition of the American Mining Congress has been brought to my attention by the officers of the organization. This gathering is properly regarded as among the most important of the great assemblages of industrial leaders that are held annually in this country. The preeminent position of the United States among the metal and mineral products is, I suspect, not fully appreciated outside of the men immediately engaged in mining enterprises. For my own information, I recently asked the Bureau of Mines as to some data on the production of various minerals and metals in the United States and other leading producing countries. I confess to have been both astonished and gratified on going over the list, which began with Aluminum, and ended with Zinc, and included twenty-eight metals and minerals, to find that in fifteen of them the United States is the world's foremost producer. Moreover this list of fifteen includes Coal, Iron, Copper, Bauxide, Petroleum, Zinc, Lead, Phosphate Rock and Sulphur; while we stand second in both Gold and Silver. In the Age of Coal, it appears that our country alone produces almost thirty-five percentum of the world's coal output. Or, if we term it the Age of Copper, we find that the United States produces fifty-seven percentum of the world's copper, so absolutely necessary in electrical development. Or, again, if we think of ours as the Age of Petroleum, we find that our country is producing considerably over sixty percentum of all the Petroleum. It will be hard to find a set of figures so impressively indexing both the natural riches and the high state of development of our country's resources.

"The immensity of our mine resources necessarily imposes a duty in behalf of those who engage in the arduous work of extracting metals and minerals from the earth. It should be our effort to lead in producing these with the minimum hazard to life. Mining is, unavoidably, an industry marked by numerous occupational hazards. We must not pay an unnecessarily high cost in life and limb for our mine products. The Federal Government has devoted years of research to mine accidents, their causes, and possible measures of preventing them. There is a large fund of information available in the Federal Government, always ready to assist, not only in producing minerals and metals with a minimum of economic waste, but at the expense of the fewest number of lives and accidents. Safety is a common meeting ground on which all who are engaged in mining can gather with a single purpose of saving life. Mine workers, mine owners and operators, State and Federal officials should all work together in the fullest cooperation.

"I will be glad to have you extend my greetings and good wishes to the Congress, and my congratulations on the prospect for a long season of improving business conditions.

"Most Sincerely yours,

"CALVIN COOLIDGE."

The White House,
September 20, 1923.

the prime requisite to industrial development is capital. Capital and property have been considered synonymous terms. To protect the orderly development of industry, society has deemed it necessary to protect property, and hence, capital. It has vested the management of industry in the hands of the responsible owners of the property, or the capital. Society has assumed that those who have the capacity to accumulate have the greater capacity to manage property. Up to now, society has assumed that labor and police protection are merely incidental.

Today, the soundness of our fundamental concept of the management of

property is being challenged. The demand is that owners shall be supplanted as the managers of property. That implies that somebody else shall be set up in their places. The instant that suggestion is made the workers, through their unions, demand that they shall be given the right to manage the property. And certain bureaus of government claim that, because they maintain a close relationship with the police power, they should be substituted for present managers.

These suggestions confront the present managers of the coal mines with the possibility that they may be called upon to finance and maintain the properties,

but to transfer the management, and hence the protection, of that property to others. And they see in the attitude of the others no desire to protect the property; on the contrary, they see an avowed purpose to exploit it. This presents such a dangerous situation, as these gentlemen view it, that it calls into action the greatest powers of resistance.

This is particularly true when the whole situation in the coal fields is viewed in the light of the recommendations of the Coal Commission's reports, with respect to the future status of labor. There is no intention to go elaborately into that question here, but it is perfectly obvious that the least the Coal Commission proposes is that labor shall, in future, participate with the responsible owners in the management of property, for the protection of which the operators alone are concerned.

When you see the situation in this intense light, it is obvious that nothing which has been done recently tends, in the least, to relieve the situation; on the contrary, everything tends to complicate it. The industrial struggle in the coal fields is not simplified; on the contrary, it is exaggerated by the Pinchot settlement of the anthracite strike and by the Coal Commission's report on labor relations.

It is recognized that the anthracite industry is roughly only one-sixth of the total. It is recognized, however, that the same principles which are set up in one-sixth must come to dominate the other five-sixths. Therefore, it is recognized that the method of procedure employed in settling the anthracite strike may conceivably be employed in the attempt to relieve the situation in bituminous. The renewal of the wage agreement in the bituminous field is scheduled for the first of next April. No one who really understands what has been done in anthracite can look forward to the first of next April with any assurance that the settlement will be arrived at without great difficulty.

Reports from the test plant of the Var Oil and Coal Company in southern France state that in a continuous run of 8½ days 35.5 tons of shale were treated to yield 1,276 gallons of crude oil and 352 gallons of gasoline. The plant is now virtually in continuous operation.

The Washington Shale Oil Products Co., of Seattle, is actively engaged in erecting its plant at DeBeque, Colo. A retort of the Ginet type will be used.

W. W. Adams, statistician for the Bureau of Mines, issues six pages of mimeograph matter, a report on the volume of explosives used in American industry in 1923.

THE COLLECTIVE PROMOTION OF COPPER AND BRASS

In American business life generally speaking there are three groups, that which produces, that which sells, and that which consumes. The enterprise, be it mining, manufacturing, or anything else, which can successfully co-ordinate the functions of these three groups, is the enterprise which will win. Miners may recover earth's treasures by the millions of tons, scientists may invent ways of reducing the costs of this production, metallurgists may devise new and skillful methods of refinement which add to the commercial value of a product, but it is all useless unless behind their work is a competent selling organization adequately equipped to get what they produce into everyday use.

Until a few years ago selling activities were almost entirely individual. There was very little of what has since come to be known as cooperative effort. Since the war, however, there has come into our business life a factor which has come to stay. It is the cooperative association, frequently referred to as the trade association, but differing very materially from the trade groups of a decade ago, which as you all know concerned themselves almost entirely with the internal affairs of the industries they represented.

Over and above all things a trade association must so operate as to stimulate competition among its member companies rather than to allay it. It must, as an organization, never be guilty of the slightest trespass into the individual concerns of these member companies. It must perforce avoid all price problems save those which can be met by natural forces, for over it always is the spectre of the Sherman law, whose minions, the agents of the Department of Justice are ever on the alert and habitually regard trade associations with grave suspicion. With these and a few other handicaps, it will be seen I think that the direction of a cooperative body is not the simplest task in the world. Yet the thing can be done successfully as is proved by the experience of the copper and brass industries, the California fruit growers, the lumber interests and many others who have embarked on collective promotion campaigns.

When the producing copper companies and the consuming brass companies decided that after all they did have something in common, they did not allow their desperate plight to rush them into a campaign of advertising and promotion. They decided that the time had come to have a careful survey made of their industries and that such a survey must be conducted by someone entirely outside of either industry. And so for sixteen

By WILLIAM A. WILLIS
Manager, Copper & Brass Research Assn

months, during which time not a single move toward rehabilitation was collectively made, this study continued. It was a very thorough and comprehensive research, extending into every state in the United States and every country in Europe. With the information gathered it was possible to definitely locate the ills of the industries and intelligently proceed to their cure.

JOINT CONSERVATION PROGRAM

"American Mining Congress,
"Wisconsin Hotel,
"Milwaukee, Wis."

"The Department of the Interior is keenly interested in the American Mining Congress, as both organizations are working for the advancement of the mineral industries of this country. The Department of the Interior has its particular interest in conservation. It is working to save human lives in mining and to eliminate the wasteful use of our natural resources. The standardization efforts of the Mining Congress will be a material help in the conservation program.

"HUBERT WORK."

No cooperative effort can be fully successful unless it is preceded by just such a thorough survey as was made in the interest of the copper and brass industries. Such a survey should be made by someone outside of the industry involved, someone with no axes to grind, someone with the courage to confront the industry with facts even if they are unpleasant. I recall very distinctly that after the survey made in the interests of copper and brass, many of the leaders in these industries made wry faces over what was placed before them. But they were game, swallowed their medicine and proceeded energetically to apply remedies to the sore spots. And this idea of preceding active work with careful surveys has become a basic policy with our association. We embark in no new fields hastily. Before a dollar is spent in exploitation the territory involved is carefully studied. When we are of the opinion that we can get copper substituted for some other metal in some manufactured article such as water heaters, washing machines, etc., with advantage to the manufacturer as

well as the user, we research the industry involved to the uttermost limits. This principle is applied to all of our activities with the result that we have never had any waste in our advertising, a field, by the way, in which millions are wasted annually through lack of experience, and we have left solid ground behind us.

When we sat down in the latter part of 1919 and studied the fruits of our survey, here briefly is what we found; almost all of the markets formerly occupied by copper, brass and bronze controlled by substitutes which had been intensively advertised and promoted and did not mean to yield their places without a struggle; an amazing public ignorance of the merits of copper and copper alloys, an entire lack of organization so far as getting copper into the hands of the ultimate consumer was concerned; no community of interest whatever between those who mined the metal and those who fabricated, manufactured and marketed it; an absence of interest in copper and copper alloys on the part of architects, builders, contractors, etc., a prejudice against it largely based on high costs and hostile propaganda, no adequate distribution of copper or brass either in the form of finished materials such as sheets, rods, tubes and wire, or in the thousands of articles in which copper, brass and bronze now go into daily consumption. Add to this the fact that poverty stricken Europe, which always had taken a large percentage of American copper, was practically out of the market, and you will get some idea of what the industries faced.

Here briefly is what was done: The Copper & Brass Research Association was formed. Behind it stood such men as Walter Douglas, president of the Phelps Dodge Corporation and a former president of the American Mining Congress; John D. Ryan and Cornelius F. Kelley of the Anaconda Copper Mining Company, R. L. Agassiz of the Calumet & Hecla Consolidated Copper Company, Stephen Birch of the Kennecott Copper Corporation, Charles Hayden of the porphyry group, and, representing the fabricating industry F. S. Chase of the Chase Companies, E. O. Goss of the Scovill Manufacturing Company, Edward H. Binns of the C. G. Hussey Company, H. J. Rowland of the Rome Brass and Copper Company, and many others conspicuous for many years in the copper and brass industries.

The association immediately proceeded on a campaign of public education. This was done through advertising, through newspaper and magazine articles, through literature, speeches made before

various interested bodies, and in other ways. We wanted to get our message before the American people and we did it, incidentally finding them a most receptive audience. We were careful never to advocate the use of copper, brass or bronze for any purpose unless we were sure that they were the best metals for that purpose. For instance I do not believe anybody will quarrel with the assertion that brass pipe is the best and most economical in the long run in plumbing; that copper is the best and most durable of all metals for general roofing purposes; that brass and bronze make the best hardware in the world; that copper and bronze are without equals in the manufacture of screens or that copper has no peer in the electrical field.

Perhaps one of the most valuable consummations of our work has been the fact that it has made us automatically the headquarters for all information concerning copper and copper products. The association now conducts a service bureau which is prepared to answer any and all questions concerning the uses of the metal, whether these inquiries are of a technical or a commercial character. Thousands of such inquiries come to us during a year, and their range is interesting. There is no more valuable an asset for a trade association than to become generally known as a source of accurate and reliable information concerning the industries which it represents, and we count our position in this respect as one of the best services the association has been able to render its member companies.

Running parallel with these activities we conduct both technical and commercial research. In connection with the Engineering Foundation we are now conducting a series of experiments into the fatigue of non-ferrous metals; in cooperation with the National Research Council and the United States Government we are making tests of copper as a protection for marine piling against the ravages of the teredo, or marine borer. Several of the larger railroads of the country are working with us in tests of copper for locomotive fireboxes, boiler tubes and thermic syphons and we have many similar researches under way. In addition we are constantly seeking out new uses for copper, brass and bronze, working on standardization problems and contributing in every possible way to that goal, which is after all our main objective, an increased consumption of the metals we represent.

What has been the result of all of this work which has now extended over a period of nearly two years? We know that during that period there has been an increase in domestic consumption of at least 75 percent. Of course the full fruits of the campaign will never be felt

until the situation abroad improves, because it must be remembered that the American copper industry was built up to its present proportions on the basis of a certain fixed foreign demand. This foreign situation seems to be gradually improving, but there can be no question but what it is primarily responsible for the low price of copper over the past few months, in the face of so hugely increased a domestic consumption. During the last eight months world consumption of new copper was approximately 230,000,000 pounds a month, which is at the rate of 2,750,000,000 pounds a year. Of this monthly consumption 192,500,000 pounds was supplied by American mines and refineries. These figures show that despite European conditions consumption

should be agreed on by all concerned before a dollar is called for or spent. No active work should be undertaken until a thorough survey has been made of the problems involved, and at the beginning of each year there should be a definite program of what is expected to be accomplished during that year. Such a program would of course have a certain amount of flexibility according to changing conditions, but in the main it should be adhered to. Insufficient appropriations, lack of immediate results, quarrels and jealousies born of loosely drawn assessment agreements, and misunderstanding of objectives to be attained in given periods are the rocks on which many a cooperative association, which should have been successful, has been wrecked.

The Copper & Brass Research Association is a voluntary, unincorporated organization. It now has forty-two member companies. At the end of any given year a member may withdraw but I am proud to say that we have never had a single withdrawal from the association ranks since 1919, when the original survey was started; in fact have gained eight new members during the past year. I think we have proved many things that were in doubt before and the most important of these is that the American people have potentialities the existence of which were not even suspected before the war. If you have something to sell that has merit and present your case intelligently and honestly, the people will listen to you. They have almost doubled their purchases of copper, brass and bronze in two years, and I think the work of the Copper & Brass Research Association has been an important factor in this.

R. J. WALTER CAME ALL THE WAY FROM COLORADO TO SEE AND LEARN — AND APPARENTLY NOT MUCH ESCAPES HIM.



over the eight months mentioned has been within about 10 percent of war peak and more than 12 percent above the pre-war world rate. August consumption of copper was the largest for any month of the year and was actually in excess of production. It can be seen from all of this that the copper industry is in a reasonably healthy state and that with the recovery of Europe it should not be long before the metal is bringing a price commensurate with the cost of production, making possible a fair return on the capital invested in it.

The experience of the Copper & Brass Research Association seems to prove conclusively that no industry should embark on a collective campaign of promotion on less than a three year program; that it should attempt nothing without an adequate appropriation to get its message across; that there should be thorough understanding on the part of all members as to the results to be attained in each year, and that a basis of assessment

GEOLOGICAL SURVEY DIRECTOR

After a year's lapse, during which he served as a member of the Coal Commission, Dr. George Otis Smith is again director of the Geological Survey. Dr. P. S. Smith, who has been acting director during the past year, resumes his duties as administrative geologist.

Under the direction of A. H. Horton, the Geological Survey has issued eight mimeograph pages of closely printed figures covering the production of electric power and consumption of fuel by public utilities power plants in the United States for January, February, March, April, and May, 1923.

The Department of Commerce announces the appointment of a committee to make a survey of the seasonal operation in the construction industry.

BROAD PROGRAM MAPPED OUT BY CONVENTION

Resolutions Cover Many Phases of Mine Problems—Work Laid Out for Mining Congress Requires Intensive Effort

If any member of the Staff, Divisions, Chapters and Committees of the American Mining Congress entertain hopes that the work of the organization would diminish with the nation's strides toward normalcy such hopes were dispelled by the program adopted by the Twenty-sixth Annual Convention.

The success of activities resulting from plans initiated by prior conventions has encouraged members to recommend new undertakings to meet the present needs of the mining industry and future needs as they may arise.

The following resolutions will form the basis for many of the organization's activities during the coming year:

INDUSTRIAL RELATIONS

Resolution No. 1, introduced by the Division of Industrial Cooperation:

WHEREAS, The American Mining Congress is vitally interested in bringing about industrial cooperation between workers and operators in the various branches of the mining industry; and

WHEREAS, The nature and the temper of labor relations are influenced and determined very largely by the mine foremen and other section executives, who represent the management in all its daily relations with workers but who, although equipped with the necessary experience in the technique of their departments, have had very little education in the policies of the industry or in the problems of labor leadership; and

Whereas, Systematic training of foremen and other sub-executives in methods of handling help and securing teamwork, in fundamentals of organization and management and in the broader problems of the industry, has been in other industries an important factor in creating and in maintaining better industrial relations; and

WHEREAS, A number of representative operators from various parts of the country and representing different phases of the mining industry have urged the preparation and organization of such training in the mining industry through the joint cooperation of operators; therefore be it

RESOLVED, That a committee be ap-

pointed by the American Mining Congress to further plans for the development of more systematic training of mine foremen and other section executives in the coal, metal, and other mining industries.

Resolution No. 2, by A. G. Mackenzie of Utah:

WHEREAS, In consequence of the work of the American Mining Congress Special Silver Committee of 1922, the United States Senate has appointed a Commission on Gold and Silver Inquiry; and

WHEREAS, The said commission has held and is holding hearings and has made and is making investigations and has collected and compiled statistics and general information of great importance to gold and silver producers and the people generally; and

WHEREAS, Representatives of the silver producers of the United States, Mexico and Canada, meeting at

Reno, Nevada, September 4-5, 1923, at the call of said commission, have proposed the organization of a Silver Export Association and taken action preliminary to such organization, therefore be it

RESOLVED by the American Mining Congress, That we hereby express our appreciation of the results achieved by the United States Senate

Commission of Gold and Silver Inquiry; that we tender our support to the movement for the organization of a Silver Export Association, or, if that be found inexpedient or inadequate, such other plan as will best serve the interests of the silver producers; and that the president of the American Mining Congress be hereby authorized to appoint such committee or committees as may in his judgment be necessary to represent the American Mining Congress in plans proposed on behalf of the gold and silver producers; and be it further

RESOLVED, That the thanks of the American Mining Congress be extended to the members of its Special Silver Committee of 1922 for their effective work.

IMMIGRATION

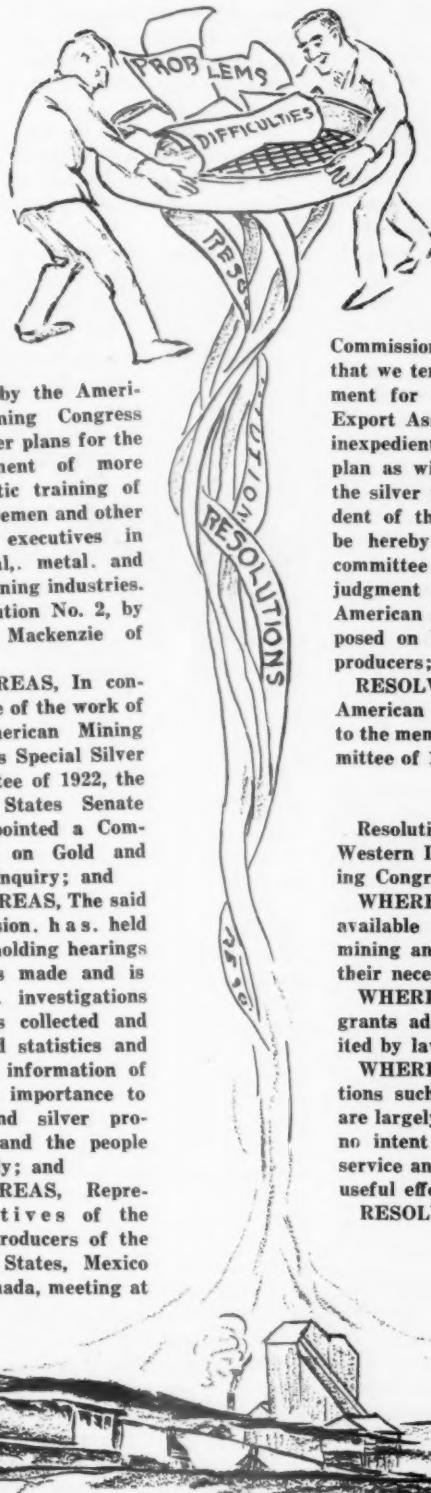
Resolution No. 3, introduced by the Western Division of the American Mining Congress:

WHEREAS, There is insufficient labor available in this country to maintain mining and other essential industries at their necessary scale of operations; and

WHEREAS, The number of immigrants admitted to this country is limited by law; and

WHEREAS, Under the existing conditions such immigrants as are admitted are largely undesirable in that they have no intent to perform any constructive service and in fact do not contribute any useful effort; therefore be it

RESOLVED, That we hereby place this organization on record as in favor of selective immigration, operative prior to embarkation or such other



procedure, if a better be proposed, as will tend to increase the proportion of workers among aliens admitted to the United States, to the end that mining and other industries may have a better labor supply than is now available or will probably be available unless specific efforts be made to increase the supply of workers from abroad.

"BLUE-SKY" LEGISLATION

Resolution No. 4, introduced by the Western Division of the American Mining Congress:

WHEREAS, In our opinion, a large part of the decline in metal production is due to unfair restrictions of so-called "blue-sky" laws, which have in many directions rendered the raising of capital for mining and other speculative ventures almost impossible, thus decreasing production of metals and contributing thereby to the cost of all construction and manufacturing and tending to eliminate the prospector and small operators from important participation in and contribution to the prosperity of the mining industry; and

WHEREAS, Mining men are in favor of reasonable legislation that will protect the public to the fullest extent from the designs of the dishonest and at the same time encourage the honest to engage in development of mining and other great resources; now, therefore be it

RESOLVED, That it is the sentiment of the mining interests that a concerted effort be made to bring about uniformity of all "blue-sky" laws to the end that, while every possible protection be given to the careful investor, encouragement be also offered to the prospector and small operator to raise capital for initial development of mineral resources, and be it further

RESOLVED, That this organization is unalterably opposed to any effort to fortify state "blue-sky" laws by similar Federal legislation and especially and emphatically condemns the intent and purpose of such measures as the Denison "blue-sky" bill.

PATERNALISM

Resolution No. 5, introduced by the Western Division of the American Mining Congress:

The American Mining Congress emphatically reiterates former protests against paternalism and government interference in private business.

It calls upon those interested in the mining industry everywhere to put forth every effort against the extension of centralization in government that undermines rights guaranteed under the Constitution, to the end that the spirit of

initiative and independence by which the country was built up may be restored.

THE PITTMAN ACT

Resolution No. 7:

WHEREAS, The legality and propriety of the action of the Department of the Treasury in revoking allotments of silver for subsidiary coinage provided for by the Pittman act have been seriously questioned by silver producers; now, therefore, be it

RESOLVED, That the American Mining Congress record the opinion that the matter rests upon judicial interpretation of the Pittman act and upon that alone.



It therefore urges that the executive officers of the American Mining Congress, in conjunction with the producers of silver, immediately take such steps as may be necessary to bring the matter before the proper courts for disinterested consideration and judicial action, to the end that a situation which has caused producers to question the good faith of the government may be clarified and the silver producers receive, fully and exactly, the benefits provided under the act, regardless of the action of a department that is wrongfully endeavoring through widespread propaganda to deceive the people into believing that producers seek an unfair interpretation of the act.

COAL EXPORTS

Resolution No. 8, introduced by George Wolfe, Acting Secretary of the Smokeless Coal Operators Association of West Virginia:

WHEREAS, The American Mining Congress is interested in the further extension of the exportation of bituminous coal to foreign lands; and

WHEREAS, It has been brought to the attention of the American Mining Congress that during the past three

years the bituminous coal industry of the United States has lost considerable, if not all, of its over seas export tonnage; and

WHEREAS, Such loss of export bituminous coal tonnage has been occasioned largely by the inability of American shippers to meet British competition; and

WHEREAS, Investigation upon the part of such American shippers of bituminous coal has developed the fact that if transportation companies with rails and piers at tidewater ports would lower their respective freight rates on overseas coal shipments seventy-five (75) cents per ton that American shippers of bituminous coal would be in a position to successfully compete with the British; therefore be it

RESOLVED, That the American Mining Congress now in session at its 26th Annual Convention at Milwaukee, Wis., go on record through its Department of Transportation that it gives its hearty cooperation and moral support to any movement along transportation lines which will benefit the bituminous coal industry of the United States in its export trade.

GOLD WITHDRAWALS.

Resolution No. 9, introduced by E. H. Wells:

WHEREAS, The continually decreasing gold production and the continuous withdrawal of gold bullion from the U. S. Treasury for industrial purposes is a continuing menace to the maintenance of the gold standard;

WHEREAS, The high level of prices—approximately 60 percent above pre-war levels—creates an economic burden upon gold which has reduced production from 101 millions in 1915 to less than 50 millions in 1922;

WHEREAS, The demand for industrial purposes has called and is calling for more gold than is being produced and is gradually reducing the available reserves while the national credit and the required use of currency based on gold is continually increasing;

WHEREAS, All recent strike settlements and all recent changes in wage situation have looked to even higher wages than during the peak of war prices which wage increases react toward higher costs of machinery and supplies used in gold mines, as well as make more difficult, the employment of men in mines where wages and costs must be based on the value of a product—fixed by government edict;

WHEREAS, Protection of the gold standard requires that gold shall be held for monetary reserves and not be dissipated;

pated by its use in the manufacture of jewelry and other luxuries;

WHEREAS, It is generally conceded that sound currency systems are essential to world business normally without which our surplus production cannot find satisfactory markets and that the use of the surplus gold now held in this country must become available to those nations from which it was received as a result of the world war, to enable those nations to deal with our farmers and manufacturers now suffering from over-production and that gold export movements may leave this country with only its pre-war supply of gold to support a very largely increased currency and an enormously increased public debt; therefore, be it

RESOLVED, By the American Mining Congress that a committee shall be appointed to investigate the present gold situation and to recommend such measures as seem best suited to protect the gold standard in the United States and throughout the world.

WATER POWER DEVELOPMENT

Resolution No. 10, introduced by Southern Division, American Mining Congress:

WHEREAS, At this time of consideration of development of water powers of the United States it is the desire of the American Mining Congress to reaffirm its position with regard to their development on terms affording equal opportunity to all. Therefore, be it resolved that the resolution as introduced by the Southern Division of the American Mining Congress and passed by the American Mining Congress in Convention assembled October 14, 1922, be reaffirmed as follows:

WHEREAS, The basic need for the development of individual industry is an adequate supply of power and increased transportation facilities; and

WHEREAS, There exist in the United States potential water powers in proximity to abundant supplies of raw materials, the development of which will facilitate transportation, and bring together capital, transportation and power;

WHEREAS, These developments should go hand in hand; therefore, be it

RESOLVED, That the American Mining Congress endorse the sound, economic policy of the development of our water powers, under such provisions of general law as will prevent monopoly and insure adequate power to communities and industries which may be economically served therefrom and developed thereby.

RELATIONS WITH MEXICO

Resolution No. 11, introduced by Resolution Committee:

WHEREAS, The respective governments of the United States and of Mexico have renewed their relations of diplomatic accord; and

WHEREAS, It is to the interest of the mining industry of the United States to give its cooperation both scientific and financial to the development of the mineral resources of Mexico; therefore, be it

RESOLVED, That the American Mining Congress on behalf of the mining industry of the United States extends to the mining industry of the Republic of Mexico its facilities of science and capital in such development; and be it further

RESOLVED, That the respective governments of the United States and of Mexico through proper channels be requested to appoint a joint commission to



Ex-Governor E. L. Philipp, who welcomed the delegates to Milwaukee at the Twenty-sixth Annual Convention of the American Mining Congress

be made up of an equal number of representatives of the mineral industries of both nations, to consider ways and means to facilitate this desired accord and co-operation; and be it further

RESOLVED, That the American Mining Congress expresses its high regard for those emissaries of the Republic of Mexico whom it has been privileged to have as its guests; Senor Faustino Roel, Consul General of Mexico to the United States; and Senor Don Moises Perogordoy Lasso, personal representative of Senor Don Miguel Allessio Robles, secretary of the Department of Industry, Commerce and Labor of Mexico, and voices its interest in the exhibit here displayed by the Republic of Mexico; and be it further

RESOLVED, That the secretary be instructed to prepare a properly signed and engrossed copy of this resolution for transmittal to the government of the Republic of Mexico; and be it further

STATE TAXATION

Resolution No. 12, by the General Tax Committee of the American Mining Congress:

WHEREAS, Tax problems are basically related to public indebtedness and public expenditures which have grown with startling rapidity during the last decade; and

WHEREAS, The growth of state and local expenditures and tax burdens have more than counterbalanced the great reduction in expenditures and taxes affected under the budget system of the federal government; and

WHEREAS, There is a deplorable lack of genuinely constructive achievement on the part of state and local governments in seeking to affect economies and reductions in public expenditures; and

WHEREAS, a burden of future taxation is being piled up by indiscriminate issues of bonds by states, counties, and municipalities; and

WHEREAS, The mining industry of the United States as a whole, more than any other industry, has been affected by increased state and local taxes, having suffered enormous increases during the last decade vastly in excess of the percent of increase in the value of mining properties, investments and enterprises during the same period; and

WHEREAS, Many mines have been forced to shut down because of their inability to mine low-grade ores at a profit; new exploration and development in the mining industry is practically at a standstill; and new capital for legitimate mining operations is becoming more and more difficult to obtain; and

WHEREAS, Investments in other non-operating properties are being eaten up by taxes before a stage is reached where profitable operation is possible; therefore, be it

RESOLVED, That the American Mining Congress shall cooperate with all individuals, associations, institutions and public officials in convincing the public that the abnormal increase in cost of state and local governments has been due largely to the demands of the people themselves as well as by public officials who have lacked constructive ideas of how public money can be saved by better organization and more efficient administration; and be it further

RESOLVED, That state and local executives be urged to make a thorough study of their governmental organizations and the functions of the departments and agencies comprising these organizations, to the end that waste, duplication, and inefficiency shall be eliminated and the fiscal problem of these governments will resolve itself into the question of how a reduction of the tax burden may be affected rather than the

opposite question of where and how may additional revenues be obtained.

DOUBLE TAXATION

Resolution No. 13, introduced by the General Tax Committee:

WHEREAS, The principal of double taxation exists in and between many of the states whereby the property, real and personal, of corporations is taxed as such and the stocks and bonds of such corporations are also taxed in the hands of the stockholders and bondholders; therefore, be it

RESOLVED, That the American Mining Congress calls upon our legislators to relieve such conditions within the states and to build up reciprocal action between states so that the situs of taxation for property should be, as to real estate and tangible personal property, its physical location; and as to intangibles, should be apportioned among the states according to business transacted therein.

SUPER TAXATION

Resolution No. 14, by the General Tax Committee of the American Mining Congress:

RESOLVED, That we denounce double taxation in all of its forms and aspects, either open or disguised, for the reason that we believe it to be unscientific, unjust and unsound, and that it is opposed to the principle of equal opportunity of our Constitution, and, except during emergencies of war, is never warranted; and in particular we disapprove any and all attempts to levy super or supplemental taxes on mines or other industries in the form of production, occupational or severance taxes when added to other forms of state income or property taxes; and, likewise, we are opposed to double taxation in the form of the federal capital stock tax levied on capital while at the same time taxes are levied on the income derived therefrom. We believe that such forms of double and super taxation tend to breed class struggles that disrupt our institutions.

TAX COURT OF APPEALS

Resolution No. 15, introduced by the General Tax Committee of American Mining Congress:

RESOLVED, That the American Mining Congress reiterates its recommendation of 1920 for a Tax Settlement Board or Tax Court of Appeals to function independently of the Bureau of Internal Revenue with broad equity powers to hear and decide all appeals in cases where the taxpayer claims to be aggrieved.

MISCELLANEOUS

Resolution No. 16:

BE IT RESOLVED, By the members of the American Mining Congress, that we hereby fully ratify and approve all the acts and proceedings of the officers,

directors, and committees of the Congress in the conduct and administration of its affairs and business during the preceding year and extend to them our hearty thanks and appreciation for their devotion to our interests.

Resolution No. 19, introduced by the Resolutions Committee:

WHEREAS, The City of Milwaukee has generously cooperated in carrying out the plans for the 1923 Convention and Exposition of Mines and Mine Equipment of the American Mining Congress; and

WHEREAS, Its representative business leaders have done everything in their power to assist in the successful carrying out of plans for the Convention and Exposition; be it

RESOLVED, That the American Mining Congress hereby express its appreciation of the cooperation given by the Milwaukee Association of Commerce and to the various Milwaukee committees, consisting of the Executive Committee of which Max W. Babb, vice-president of the Allis-Chalmers Mfg. Co. is chairman; the Entertainment Committee of which J. J. McDevitt of the S. Obermayer Co. is chairman; the Exposition Committee of which E. A. Wurster of the Falk Corporation is chairman and of the Finance Committee of which B. V. E. Nordberg of the Nordberg Mfg. Co. is chairman; be it further

RESOLVED, That the American Mining Congress hereby expresses its appreciation of the courtesy and the cordial spirit of hospitality which has been shown by all of the various officials and citizens and particularly of Joseph C. Grieb, manager of the Milwaukee Public Auditorium.

OIL SHALE NOTES

HAROLD B. QUARTON, United States consul at Reval, Estonia, reports that 300,000 tons of oil shale have been produced, ready for future distillation and that the total production for 1923 considerably exceeds that for 1922: Three plants are now under construction—one governmental and two private. The development of oil shale in Estonia is going on apace with 343 permits for exploration issued.

The Fourth Annual Oil Shale Conference will be held in Milwaukee, Wis., in connection with the meeting of the American Mining Congress, September 24-29. Prof. C. S. Crouse, of the Uni-

versity of Kentucky, and Dean E. Winchester, of Denver, will be the principal speakers. Dr. Victor C. Alderson, President of the Colorado School of Mines, Chairman of the Oil Shale Section of the Congress, will preside.

Tudor G. Trevor, Inspector of Mines, Pretoria, South Africa, has recently made an exhaustive examination and favorable report on the oil shale possibilities in that country. He describes the Ermeco district as "extremely rich" with yields from 22 to 98 gallons and a conservative average of 40 gallons to the ton.

At Neevneo, New South Wales, Australia, 23,467 tons of oil shale were mined in 1922 to the value of \$300,000.

Mackenzie College, Sao Paulo, Brazil, is preparing to examine, prospect, sample and distil oil shale from all the known deposits in southern and middle Brazil. The work will be expensive and long continued, but its importance to the industrial growth of Brazil cannot be overestimated.

The report of the Director of the Building Research Board, of London, contains the results of experimental work done at the experimental station of the Board. A puzzolanic hydraulic cement has been produced by the use of spent shale from the Scottish fields. This cement shows a tensile strength, at three months' age, somewhat greater than that demanded by standard specifications for Portland cement and is much harder. A practical use for spent shale is an important feature in the development of the industry and results of experimental work are interesting and valuable.

Herbert T. Burls, F. G. S., of London, claims to have perfected a process by which the excess of sulphur in the shales of Dorsetshire, England, can be reduced to a negligible amount at a cost that makes the process commercially successful. If the claims can be substantiated in practice, large deposits of oil shale in England will become commercially productive and England will secure a domestic supply of crude oil.

T. J. Thorburn, in a report to the minister of Agriculture and Mines of Newfoundland, states that the oil shale deposits on the island cover an area of 200 square miles. At the mouth of the upper Number, at Nichol'sville, the shale is only 10 feet from the surface. A bore hole is now down 500 feet and is still in oil shale. Harold C. E. Spence, in a report on the oil shale beds on the west coast of Newfoundland, reports a bore hole that passed through 481 feet of oil shale, in a total depth of 806 feet. Thirty-two different oil shale strata were passed through, of varying thickness, the largest of which were 24, 30, 64, and 234 feet thick. The average yield was from 20 to 30 imperial gallons to the ton.



THE NATIONAL EXPOSITION OF MINES AND EQUIPMENT

Most Notable Exhibition in History of Mining Industry—Diversity of Exhibits Complete

FROM the standpoint of completeness, the National Exposition of Mines and Mine Equipment, held in conjunction with the 26th Annual Convention of the American Mining Congress at Milwaukee, Wis., September 24th to 29th, was perhaps the most notable in the history of the industry. Every exhibit was a manufacturer's exhibit; the machinery was the heaviest ever shown, and the diversity of exhibits complete.

Milwaukee itself is a center for the manufacturer of mining equipment and machinery, for there is located Allis-Chalmers Manufacturing Company, the Bucyrus Company, Chain Belt Company, Dingle Magnetic Separator Company, Falk Corporation, Magnetic Manufacturing Company, Manierre Engine and Machine Company, Milwaukee Locomotive Manufacturing Company, National Brake and Electric Company, Nordberg Manufacturing Company, Pawling & Harnischfeger, Sivyer Steel Casting Company, Smith Engineering Works—all of whom are well known to the mining fraternity.

While all of these manufacturers were exhibitors, the total number of exhibits was 125, which included every manufacturer of national importance making wire rope, storage batteries, mine locomotives, loading machines, roller bearings, rail welding and bonding, and mine electrical railway equipment.

Most of the exhibits showed machinery in actual operation. The Joy Machine Company had on exhibit their loading machine, which actually handled the coal, showing the exclusive Digging Fingers and the process of loading into mine cars. The Myers-Whaley Company, the Lake Superior Loader Company, the Hoar Shovel Company, all showed their machinery in actual operation.

One of the newer and interesting exhibits was that of the American Coal Claiming Company, with their new dry process for the cleaning of coal. The Thew Shovel Company were unable to get their material in the hall because of its tremendous weight. It therefore gave demonstrations of its shovel in a vacant lot adjoining the Auditorium.

Exhibits included all appliances for the mine from locomotives to ball bearings and from processes of coal cleaning to explosives. The educational exhibits

were a real feature of the Exposition, notable among which was the exhibit from Mexico, the United States Bureau of Mines and the Colorado School of Mines, the latter having in continuous operation an oil shale distillery which is the first time it has ever been possible to keep the machinery in continuous operation. Dr. Victor C. Alderson, President of the School of Mines, had charge of this exhibit. The United States Bureau of Mines had a working model complete to the slightest detail of an oil-drilling outfit, together with a complete display

of blasting powders—in fact everything from miniature models complete in every detail to full size working engines. The list includes mechanical car loaders, ore crushers, well and explosive hole drillers, huge air compressors, one-man shovels, miniature plants showing the process of screening and cleaning coal and reducing metals, monster double gears with wheels that look like the backbone of a fish, air blowers for mine shafts, and in the main corridor one exhibitor had a neat exhibit in the form of a big exhibition car, a remodeled limousine with sides and rear that open out to form display shelves which has traveled through every state in the Union. The exhibit of the Mexican government consisted of a display of many of the products of Mexican industry, with a magnificent collection of cut and polished opals. There were specimens of pottery, woodwork, ores from Mexican mines, bright colored shawls and other fabrics.

Those exhibiting were:

Allis-Chalmers Mfg. Co., Milwaukee, Wis.

American Appraisal Co., Milwaukee, Wis.

American Atmos Corporation, New York, N. Y.

American Car and Foundry Co., Chicago, Ill.

American Coal Cleaning Corp., Welch, W. Va.

American Metal Products Co., Chicago, Ill.

American Steel & Wire Co., Chicago, Ill.

Appleton Electric Co., Chicago, Ill.

Atlas Powder Co., Wilmington, Del.

Automatic Reclosing Circuit Breaker Co., Columbus, Ohio.

Baldwin Locomotive Works, Philadelphia, Pa.

The Bethlehem Steel Company, Bethlehem, Pa.

Bock Bearing Co., Toledo, Ohio.

Broderick & Bascom Rope Co., St. Louis, Mo.

The Bucyrus Company, Milwaukee, Wis.

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Climax Engineering Co., Clinton, Iowa.

Coal Age, New York City, N. Y.

Coal Mine Management, Chicago, Ill.

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The Lorain Steel Company, Johnstown, Pa.
Macwhyte Company, Kenosha, Wis.
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Mexican government.
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NATIONAL MINING STANDARDS RECOMMENDED

Fourteen Committees of the Standardization Division of the American Mining Congress Make Recommendations for Standards

THE Fourth National Standardization Conference held in conjunction with the 26th Annual Convention of the American Mining Congress convened at Engleman Hall, Public Auditorium, Milwaukee, Wis., on Thursday, September 27th. At the opening session, Mr. W. A. Durgin, Chief of the Division of Simplified Practice of the United States Department of Commerce, delivered an interesting lecture for Mr. Herbert C. Hoover, Secretary of Commerce, using illustrated charts showing the percentage of waste in industry and outlining the work of the Department of Commerce on simplified practice.

An address was also given by Mr. Alfred W. Whitney, Chairman of the American Engineering Standards Committee.

Colonel Warren R. Roberts, Chairman of the Coal Mining Branch, Standardization Division of the American Mining Congress, outlined the work that already has been accomplished by this Division.

The Standardization Division is divided into two sections—coal and metal—the total number of committees representing both branches being eighteen. Fourteen of these committees made reports to the Fourth National Standardization Conference. These reports included:

Underground Power Transmission and Power Equipment.

Mining and Loading Equipment.

Mine Timbering (Coal and Metal Branches).

Metal Mine Accounting.

Underground Transportation (Coal and Metal Branches).

Mine Ventilation (Coal and Metal Branches).

Outside Coal Handling Equipment.

Fire-Fighting Equipment.

Mine Drainage.

Methods of Mine Sampling.

Mechanical Loading Underground.

Of these reports, four were progress reports, the others making definite recommendations for standards.

The Committee on Fire-Fighting Equipment made recommendations for standards, including

fire proof buildings, steel or reinforced concrete shafts headframes or houses, the making fireproof of all shaft stations, pump rooms, both main fan and booster fan stations, powder magazines, stables, sections of main haulage drift and drifts leading to or from fans. The Committee favored the elimination of open light underground and the compulsory use of safety lamps, the prohibition of smoking underground and the electric blasting and inspection of underground openings by fire patrols between the regular working shifts. This Committee expects to make its recommendations final to the Fifth National Standardization Conferences to be held in 1924 and to submit their recommendations for final approval as standards to the General Correlating Committee for presentation to the American Engineering Standards Committee.

UNDERGROUND TRANSPORTATION

The recommendations of the Committee on Underground Transportation for the Metal Mining Branch included size and type of car, gauge of track, weight of rail, grade of track, dimensions of drift and size of chute, covering both hand trammung and motor haulage. These recommendations were submitted for further consideration and discussion, and a more extended report will be made to the Fifth National Standardization Conference.

The Committee on Mine Sampling submitted a progress report, advising that a questionnaire had been sent to a large number of metal mining companies and that the Committee will be in position

next year to submit a detailed report for the consideration of mine operators. It is understood that this questionnaire is one of the most complete ever submitted to a mining company upon this subject and that the information already in hand gives promise that the recommendations next year will be far-reaching and of inestimable value to the industry.

MINE TIMBERING

The Committee on Mine Timbering for the Coal Mining Branch submitted a number of recommendations through its various sub-committees, including the general subject of mine timbering, timber preservation and the use of concrete in mine timbering. Two sub-committees of this section on Structural Steel for Mine Timbering and the Salvage of Mine Timbers made no report. This Committee discussed the subject of reforestration and appointed a sub-committee for the Metal Mining Branch to cooperate with the operators in experimentation looking to some method that will both preserve the timbers and prevent mine fires.

MINE DRAINAGE

The Committee on Mine Drainage for the Coal Mining Branch submitted an extensive report dealing with pumps for development work, permanent pumping stations, natural drainage, unwatering abandoned workings and mine water and its action upon mine drainage equipment.

Sub-Committee No. 1—Pumps for Development Work—Made recommendations for standards on location of pumps, type and capacity of pumps, discharge line and piping construction of stations, pumps, motor and controls, controllers, and motor windings.

Sub-Committee No. 2—Permanent Pumping Stations—Made Recommendations on construction of underground pumping stations, specifications for electric-driven pumps, specifications for electric-driven plunger pumps (capacity, head speed), general design, water end, plungers and glands, gearing, workmanship and material, with special recommendation for specifications for centrifugal



pumps covering general design, base plate, casing, impellers, stuffing boxes and glands, shaft, couplings, bearings, thrust bearings, motor and coupling shield, coating and fixings.

Sub-Committee No. 3, on Natural Drainage, amplified its report made in 1922, presented to the Third National Standardization Conference and printed in the Third National Standardization Bulletin. This supplemental report includes recommendations concerning opening of a mine, main entries, main haulage road, construction of a ditch, sumps and recommendations for the estimating of the cost of a drainage ditch against a pumping proposition over a period of years, under approximately the same operating conditions.

Sub-Committee No. 4—Pumps for Unwatering Abandoned Workings—Make recommendations upon this subject, covering capacity, performance, specifications, siphons, installation of mine siphon, air lift, air pressure, explanation of air life terms, amount of air required and equipment required.

Sub-Committee No. 5—Mine Water and Its Action Upon Mine Drainage Equipment—treats the general subject of acids in mine water and their action upon copper, tin, lead, zinc, antimony, etc. In the summing up of their report, they recommend the following metals as highly resistant to the action of acidulous mine water: lead base alloys, high silicon iron, specified brands of high-chrome steel, bronze, aluminum alloys, molybdenum metal, grey iron, malleable iron, cast steel, German silver, carbon and alloys steels.

MECHANICAL LOADING UNDERGROUND

The Committee on Mechanical Loading Underground of the Metal Mining Branch submitted a supplemental report to their report given to the Third National Standardization Conference and the recommendations included in their report in the Third National Standardization Bulletin were changed only in the item of power. The Committee also made definite recommendations in regard to loaders, which include one machine with complete equipment for each gang of miners; a car of not less than one-ton capacity; the loader should be run by the miners who should also tram the car and dump it; work should be done on contract at a definite price per car, or a bonus for extra average tonnage produced over weekly periods should be paid. Five recommendations were made in the use of scrapers, which include that large scrapers shall be sectionalized so that no piece will weigh more than 600 pounds; that teeth are unnecessary, and interchangeable manganese steel lips should be used; that the digging angle of the

scraper-lip should be increased for handling coarse material; that sheaves for back-haul should be brushed and should be provided with positive lubrication; that an electric portable flood-light of 100 to 200 candlepower should be provided with each scraper outfit. The work of this Committee is divided into three sections, Large Loaders, Small Loaders and Scrapers. It is expected that their report to the Fifth National Standardization Conference will make recommendations for final standards on these subjects.

MINE VENTILATION

The Committee on Mine Ventilation for the Metal Mining Branch through Mr. Mitke, Acting Chairman, made definite recommendations in regard to the installation of mine fans and made definite recommendations concerning the use of mine doors in case of fire. The Committee on this same subject for the Coal Mining Branch resubmitted its report as appeared in the Third National Standardization Bulletin, and it was found after a thorough discussion of the subject that these two committees were materially in harmony with the process of mine ventilation, both coal and metal.

UNDERGROUND LOADING AND CUTTING MACHINES

The Committee on Underground Coal Cutting and Loading Machines pointed out that because of the development in cutting and loading machinery in coal mines standardization was difficult because any definite recommendations for standardization at this time would have a tendency to limit development, particularly at this early stage. The report of this Committee deals with the present stage of development in mining and loading machines and their report includes the information obtained through a questionnaire sent to all companies known to be using or that had used mechanical loading equipment to get a comparison between the use of mechanical loading machinery and hand loading machinery on the basis of tons loaded per man per shift, as well as the type of machines and the general conditions under which it is operating.

UNDERGROUND TRANSMISSION AND POWER EQUIPMENT

The Committees on Underground Transmission and Power Equipment made a joint report which is a progress report, these Committees having submitted definite recommendations to the General Correlating Committee last year.

OUTSIDE COAL HANDLING EQUIPMENT

A short progress report was also presented for Outside Coal Handling Equipment, this Committee also having made

definite recommendations to the Third National Standardization Conference which were adopted and submitted to the General Correlating Committee.

UNDERGROUND TRANSPORTATION

The Underground Transportation Committee for the Coal Mining Branch is divided into three sub-committees, all of which made recommendations. The recommendations made by the Sub-Committee on Standardization and Design of Car Construction are supplemental to the report of this Committee to the Third National Standardization Conference. The Sub-Committee on Mine Tracks and Signals makes recommendations on curved room turnout, with drawings to illustrate their recommendations. They also recommend certain chemical composition of carbon steel frogs and manganese frogs.

Sub-Committee No. 3—Mine Locomotives—This report covered speed of trolley type gathering locomotive, speed for main haulage locomotive, friction on mine cars, ball bearings, curve friction and the shape of wheel flange and tread.

The report of the Committee on Metal Mine Accounting was not in shape to be presented to the Fourth National Standardization Conference but will be ready for inclusion in the Fourth National Standardization Bulletin.

MEXICAN CLAIMS

One of the first claims to be presented to the recently created American-Mexican Claims Commission is that of Mrs. Nella Gregory of McGhee, Ark., the widow of Charles R. Watson, who was killed in 1916 while engaged as a mining engineer by the Cusi Mining Company at Chihuahua.

The West Virginia Geological Survey, Morgantown, W. Va., has just issued a detailed report on Tucker County, by David B. Reger, issued under date of March 15, 1923, containing 542 pages plus 18 pages of introductory matter, illustrated with 16 half-tone plates and 11 zinc etchings in the text, accompanied by a separate case of topographic and geologic maps. Price, delivery charges prepaid, \$3. Extra copies of topographic map 75 cents each; of the geologic map, \$1 each. Address West Virginia Geological Survey, P. O. Box 848, Morgantown, W. Va.

Attention recently has been given to the production of carbon black from oil shale; that is, if the gases evolved during the retorting process are burned instead of being condensed into oil, a large amount of high-grade carbon black can be produced. The demand for carbon black amounts to 50,000,000 pounds a year and is steadily increasing.

UNDERGROUND POWER TRANSMISSION

From the
Electrical Engineer's Viewpoint

By CARL LEE

Peabody Coal Co., Chicago, Ill.

THE objects of Standardization in mining have been stated as Safety, Efficiency and Conservation. These have been discussed at length in the meetings of the American Mining Congress.

The objects of Standardization in Underground Power Transmission might be stated as Safety, Efficiency and Economy.

The first of these, Safety, has been quite fully covered in the reports of the Committee on this subject. The rules were developed principally from Bureau of Mines Technical Paper 138, "Suggested Safety Rules for Installing and Using Electrical Equipment in Bituminous Coal Mines." The rules of the National Electric Code apply in part on this subject.

The second object, Efficiency, as applied to machinery, is very well covered by the Standardization Rules of the American Institute of Electrical Engineers. Well-defined rules for testing, well-known laws of design and keen competition in manufacture assure the mining industry of efficient electrical equipment.

Efficiency, as applied to Underground Power Transmission, may be simply defined as the ratio of the voltage at the load end of the line to the voltage at the generator end of the line. For any given steady load this may be measured by means of meters. For a simple two-wire circuit, it may be quite closely calculated from tables or charts.

It is not physically possible to have 100 per cent efficiency in transmission. The usual 2 per cent to 5 per cent loss in lighting circuits is almost impossible for mine circuits and even the 10 per cent to 12 per cent loss sometimes found in industrial plants is usually unattainable for the average mine.

In many states the maximum trolley voltage allowed by law is 275 volts. Mine generators are usually designed for 250 volts at no load and 275 volts at full load, thus compounding 10 per cent. This compounding partially offsets the drop in voltage or loss on the line. The loss frequently, if not in the majority of cases, is over 20 per cent. Thus 275 volts less 20 per cent equals 220 volts at the load end. Manufacturers have realized the average conditions existing and therefore have generally used 210 or 220 volt motors on coal mining equipment.

The efficiency of transmission depends principally on the following:

- Voltage used.
- Size of load.
- Size of conductors.
- Length of conductors.
- Joints in negative.
- Joints in positive.

For a given current in a circuit the percentage efficiency of transmission is reduced with increasing voltages. Thus if the voltage were doubled on a circuit carrying a given current the percentage of voltage drop would be reduced one-half.

For any given circuit an increase in the load decreases the efficiency of transmission almost inversely.

For a given load and voltage, an increase in the size of the conductors will increase the efficiency almost in direct proportion, while an increase in length will decrease it almost inversely. The joints in the conductors affect the efficiency in a similar way that the length affects it. The poorer the joints the lower the efficiency. This very often plays an important part where the rails are used as the return circuit.

Ideal conditions where the load is steady and concentrated, the joints perfect, and the wires the same size on both sides of the line are seldom found. Such cases can be calculated, the proper efficiency decided upon and the exact wires required to give that efficiency installed. Unfortunately, these are rare cases.

The actual conditions usually met are complicated and require considerable calculation to arrive at even an approximate figure to represent the efficiency of transmission. Even with those figures at hand, there is another factor to be considered. That is the economy of the entire mining operation.

It is here that further study and standardization from an engineering standpoint will mean a great deal to the industry.

The efficiency of transmission required from an economical standpoint will depend upon or be affected by:

1. Cost of power at the main generating station or substation.
2. Cost of copper and upkeep of lines.
3. Load factor.

The efficiency of transmission should be increased as the cost of power increases. Thus the reduced losses would partially offset the increased cost per K. W. hour.

The cost of copper is reflected principally in an interest and depreciation charge which is a considerable item, but not nearly so great as the cost of power.

The load factor affects the economy of transmission. If a line has a high load factor, the percentage losses should be kept low, while, with a low load factor,

the losses may be high for peak loads, and low for light loads.

The load factor will be affected by the character of equipment used, thus:

1. Haulage locomotives usually have a low load factor.
2. Gathering locomotives usually have a slightly higher load factor than haulage locomotives.
3. Mining machines having shunt wound motors and working at the face usually have a somewhat higher load factor than either of the above.
4. Pump motors and fans generally furnish a higher load factor than any other form of load.

No effort has been made in this article to set down any rules or standards based upon electrical engineering theory or practice. The various points mentioned are those that appear important in the consideration of additional standardization rules. A great deal of study will be required to formulate general rules to cover the subject of power transmission. No doubt if those responsible for the design of transmission lines undertake to formulate "Rules and Recommended Practices," dealing generally on this subject, a great deal may be accomplished.

UNDERGROUND POWER TRANSMISSION

From the
Engineer's Viewpoint

By H. M. WARREN

Construction Engineer, Glen Alden Coal Co., Scranton, Pa.

FROM the standpoint of the engineer, standardization of underground power transmission involves very careful consideration of many features, the best solution of which can only be finally determined by actual experience under operating conditions.

During the past twenty or more years in which electricity has been used in the mines at a constantly increasing rate, many schemes for handling underground transmission problems have been used and many abandoned due to various reasons. However, it would appear that because of this experience it should now be possible to standardize underground power transmission systems to a considerable degree.

While it is impracticable to agree on any scheme of standardization of equipment and installation which would probably meet conditions in all metal and coal mines, because the conditions and methods of mining vary so greatly, standardization could probably be effected by subdivision into various groups. For example, standardization could probably be

accomplished to, in general, meet bituminous coal mining conditions where the seams lie more or less level and of rather uniform thickness; on the other hand in the anthracite mines the different veins vary greatly in thickness, depth, and even in the same mine a vein may at one place be flat and in another section nearly vertical, thus making it necessary to meet a variety of conditions so that standardization to meet anthracite conditions might probably be in a separate group.

In general, inside power transmission systems are installed to furnish electricity for operating electric trolley and storage battery locomotives, tail and endless rope haulages, slope and plane equipments, ventilating, pumping, coal cutting, conveying, loading equipments and lighting. Electric locomotives require the use of direct current, whereas the other equipments can be operated either by direct or alternating current, but where the distances are relatively great and the amount of power to be handled relatively large, alternating current is, in general, to be preferred. For these reasons, the larger mines in all probability use both direct and alternating current.

In formulating standardized installation of underground transmission systems, careful consideration must be given many features. From an economic viewpoint, it is desirable to use as high a voltage as is practicable from a safety and operating standpoint. Excessive dampness in certain mines might limit the voltage at which alternating current equipment should be used, it having been determined by experience that the so-called higher voltage equipment gives trouble, due to breakdown from moisture, whereas similar equipment operating under favorable conditions would give satisfactory service.

When direct current is used, there is always a very great chance for stray circuits to exist, in that the return current tends to leave the rails, flow through streams of mine water and follow pipes or other conductors. For this reason, if lead or armored cables are used careful consideration must be given to the question of insipient arcing or electrolysis which may be caused by stray currents and result in failure of the cables.

Location and method of supporting conductors must include consideration—roof conditions, mine timbering and the renewal of same.

Conductors may be taken into the mines through shafts, slopes, drifts or boreholes. Experience seems to indicate that where shafts are wet it is quite unsatisfactory to carry the conductors in such a shaft. Where practicable, the most satisfactory method is to lead the

conductors in through a lined borehole, for, by so doing, they are not subject to mechanical injury or the action of moisture or mine water.

The question of location of transformers used with alternating current systems should receive careful consideration. Under certain favorable conditions it might be advisable to place them in the mine, and in others it might be preferable to place them outside and lead the low tension circuit equipment through a borehole.

While there are many other important factors which must receive careful consideration in arriving at the standardization of underground power transmission, such standardization is undoubtedly desirable and should be carried out in so far as it is practicable.

CONGRESS SESSION

President Coolidge, like President Harding before him, has been besieged by various groups of congressmen and senators to call an extra session of congress to handle the agricultural and coal situations. Representative Treadway, republican of Massachusetts, has been the principal proponent for an extra session to consider the coal question. President Coolidge, however, has let it be understood that, in the absence of any concrete proposals to meet either situation, he will not convene congress in extra session, and indications are that there will be no meeting of the national legislators until the regular session on Monday, December 3. The President has refrained from expressing his views on important domestic and foreign questions in advance of his message to congress. In that message the President will give to congress and the country his mature views on pending issues. Although the Coal Commission addressed its reports directly to congress and the President, in accordance with the law, it is expected Mr. Coolidge will refer to the recommendations of the Commission in his message to congress and commend its recommendations to their careful consideration.

COLORADO POWER DEVELOPMENT

A hitch in the development of power from the Colorado river by the seven states through which it flows has occurred in the refusal of Arizona to approve the pact recently negotiated by Secretary of Commerce Hoover. Arizona desires to create a state corporation to develop power within the state for the use of its mines and smelters. Its representative recently appeared before the Federal Power Commission for approval of the proposed corporation.

INDUSTRIAL NOTES

Dorr Company, engineers, New York City, will move their Scranton office to Wilkes-Barre, Pa., on September 10, and will hereafter be located at 536 Miners Bank Building. Mr. John Griffen will be in charge of this branch of their work.

Thomas Elevator Company, of Chicago, Ill., has developed a new electric mine hoist. The main features of this new hoist are oversize drums, low pedestals, semi-automatic control, thru-bolt bearing construction, and extra large brakes. It is designed especially for pulling cars up inclines, sinking shafts, or any similar class of work which requires unusual strength and a large cable capacity. Bulletin No. 36, which this company has ready for distribution, will be furnished on request and will give full details and description of this type of hoist.

Richard W. Gardiner, formerly chief accountant of the Federal Trade Commission and for the past six years commissioner of the Pittsburgh Coal Producers' Association, announces that he has opened an office for the practice of accounting in the Oliver Building at Pittsburgh.

Thomas F. Kelly, of Buffalo, N. Y., has been appointed manager of the Smelters' General Briquette Corporation, which is a new corporation organized to succeed the metallurgical department of the General Briquetting Company. This company will specialize in the manufacture of briquettes for smelting purposes, notably from iron flue dust.

Ellsworth B. A. Swoyer, of Perth Amboy, N. J., has been appointed manager of the General Fuel Briquette Corporation, organized to succeed the fuel department of the General Briquetting Company.

New shaker screens, picking tables, loading booms and all of the latest mechanical inventions to insure efficient preparation of coal have just been installed at Rachel Mine, Downs, W. Va., near Fairmont, and Frances Mine at Cresaps, W. Va., near Moundsville, on the Baltimore & Ohio Railroad, by the Bertha-Consumers Company, of Pittsburgh, Pa. All mines now operated by the Bertha-Consumers Company have been similarly equipped.

STEAM SHOVEL STANDARDIZATION

BY ROBERT E. TALLY

United Verde Copper Co., Jerome, Ariz.

STANDARDIZATION in industry is a means of simplifying operations and reducing costs.

Standardization in shovel mines consists in selecting the most efficient methods and equipment for the conditions, and the utilization of the same methods and equipment for the conditions which will permit. Conditions arise justifying the use of different methods and equipment at the same time, but a large percentage of the yardage at shovel mines occurs under conditions that make standardization advisable. It will never be advisable for all operations to use the same size or the same make shovels, locomotives, cars, etc. Nor can the height of benches or banks, or the methods of drilling and breaking ground be standardized, except in a very broad sense of the term.

There are several more or less equally efficient makes of equipment, and improvements in equipment have resulted largely from competition, making it inadvisable to even consider standardization on any one make.

The character and topography of the ground, and the total and daily yardage and investment requirements are the main factors to be used in determining the size or capacity of the equipment. It would be dangerous to use a small shovel on a high bank. Nor would it be good practice to use a large shovel on a low bank, or large expensive locomotives and cars for small shovels and small yardages.

The height of the bank should be determined by the depth to which the ground can be economically broken and the necessity for control or separation of ore from waste where sorting is essential.

The height of the bank determines the size of the shovel. The width of a cut which a shovel can make at a distance of eight feet above the track should approximate the height of the bank. This is equivalent to the total lengths of the boom and dipper stick.

PREPARING GROUND

Ground may be classed as soft, medium and hard.

The most successful methods for breaking ground are well drill blasting holes, well drill holes with toe hole relievers, toe holes, gopher holes, T-tunnel blasting chambers, etc.

Soft ground requires little or no drilling or blasting. Medium and hard ground may be broken by any of the above methods, or by a combination thereof.

A series of tests should be conducted to determine the most economical depth

to which the ground can be broken, as well as the best methods of drilling and blasting the ground. Any of the standard well drills are satisfactory. Toe holes may be drilled by any of the standard burley, jackhammer or water leyner types of drills. Tests should also be conducted to determine the best types of drills, and the character and amount of explosives to be used.

SHOVELS

Size:

There are two standard types of shovels for mining work.

1. The $3\frac{1}{2}$ to 6-yard capacity, commonly termed the railroad type. This is probably the most standard shovel made, and the most satisfactory for the average run of work. Probably 75 percent of the total yardage handled at steam shovel mines is by this type of shovel. Future experience, however, may prove that a larger shovel will replace this as a standard.

2. The 6 to 8-yard capacity. This shovel is particularly adapted to thorough-cut work, and for high banks when the character of the ground will permit.

Fuel—Shovel and locomotives:

The fuel cost per yard, or per shovel or locomotive shift, is the deciding factor in choosing fuel. It is often advantageous to be able to change from one fuel to another in accordance with market conditions. The economy derived from superheaters well warrants the cost of installation.

The electric shovel is being rapidly developed to a high degree of perfection, and is now in strong competition with the steam shovel. Future developments will probably be in favor of the electric shovel.

Trucks:

Another recent and important development in shovel work is the caterpillar truck, the use of which minimizes delays, reduces the number of pitmen, and enables the shovel to make a hasty retreat from slides.

TRANSPORTATION

The size and capacity of locomotives and cars are determined by yardage requirements, distances and grades.

The standard types of locomotives are the Dinkey, Saddle-tank, Side-tank and Switcher. They vary in weight from 35 to 125 tons.

Dump cars have capacities ranging from 6 to 30 yards.

Rails should be of sufficient weight, and ties properly spaced, with a view of

minimizing maintenance costs, and in order to avoid delays. Poor track causes wrecks and is false economy.

GENERAL

Satisfactory equipment for average yardages, distances and grades consists of the 80-ton switching type locomotives, 25-yard dump cars, and 75-pound rail. Smaller equipment is more efficient for smaller jobs. Equipment should be selected on the basis of the lowest cost per yard mile for the entire yardage, cost to include interest on the investment, depreciation, operating and maintenance costs, etc.

A large shovel job warrants the purchase of a road spreader, track mover, crane, and other miscellaneous equipment. Small jobs do not warrant this investment.

The benefits of standardization are reduced inventories and the interchangeability of equipment and of operators. It enables the manufacturer to specialize on fewer sizes, to furnish deliveries, to improve designs and reduce costs.

A careful study of conditions at shovel mines would, no doubt, show that equipment could be standardized to three, and not to exceed four, different types and sizes. Probably 90 percent of the large mines could standardize to advantage on one, and not to exceed two, different types.

The present-day lack of standardization is due in a large measure, not to the fact that the value of standardization has been overlooked, but on account of improvements in shovel design and methods. Further, many of the large mines have been developed from smaller ones, where smaller equipment was most efficient, and such mines, in many cases, have not been warranted nor able to replace the old equipment.

Standardization practice at shovel and underground copper mines is not only advantageous; it is a necessity. The price of the metal is so low, production costs are so high, and competition is so keen, that the industry must be operated on the most efficient basis possible. Efficiency in this case might be defined as the coordination of carefully selected unit standards and satisfactory labor results.

The American Mining Congress is to be congratulated for its splendid efforts to promote standardization. The task is a huge one and well warranted by the results possible of accomplishment. Let us hope that the good start made by the Congress will be continued to a successful conclusion.

COLORADO METAL MINING COMING BACK

By GEO. A. STALL

WHILE the metal mining industry in Colorado is not prosperous and happy, a substantial amount of new development work is in progress this year and the record of production for 1923 will show a substantial increase over that of a year ago. Five or six of the mining counties of the state will show an increase of production of 50 percent or more as compared with 1922. Due to the tariff on tungsten, a modest resumption of the mining of tungsten ores in Boulder County has taken place this year, and shipments aggregating a value of a quarter million dollars will be made during 1923. San Miguel, San Juan, Saguache, Summit, and Teller Counties will all show substantially increased shipments over 1922.

There are two enterprises which were undertaken last year and are being completed this year which have special bearings on the future of metal mining in Colorado. One is the Rawley Mine, a few miles south of Salida, near the old camp of Bonanza, which was located in the early eighties. This mine is thirty years old and has had something like a million and a quarter dollars expended upon it in development work, but with almost no shipments, as the ore is medium and low grade in value. During the last year this property was acquired by a new corporation, and over \$600,000 of eastern capital has been expended in equipping the property with a concentrating mill and a seven and one-half mile tramway with which to transport the concentrates to the nearest railroad switch. This construction was concluded during the summer, and shipments began in July. Already more than 200 narrow-gauge cars holding between 20 and 25 tons each of concentrates have been shipped to the smelter at Leadville, and a steady and increasing production will be made. Three years' supply of ore aggregating over 300,000 tons was in sight before the property was equipped for production. The bearing which this enterprise has on the metal mining industry is due to the fact that these concentrates contain from 18 to 25 percent lead, thereby furnishing the lead smelter with a new supply of this desirable ore. This enables the smelter to curtail its importation of lead ores from Idaho, which are necessary to the fluxing of the silicious ores from Leadville and the other districts tributary to that plant.

The other enterprise is the erection of the first unit at an estimated capacity of 50 tons per day at the Durango smelter for the commercial demonstration of the new zinc sulphating process, popu-

larly known as the Coolbaugh process. General Bulkeley Wells, through one of the companies which he directed, undertook several years ago to back Mr. Coolbaugh and his two associate metallurgists, Mr. Read and Mr. Fischer, in a series of experiments to demonstrate the feasibility and economic practicability of their ideas in regard to that work. Experiments carried on for more than two years and one-half in laboratory test plant and finally in small tonnage operations in a furnace of size at an expense exceeding \$100,000, which were considered highly successful. These results were then presented to the officials of the A. S. & R. Co. in the spring of 1922 and were carefully gone over by the metallurgists of that company. The result was that the A. S. & R. Co. agreed to

join the Metals Exploration Co. in the building of an initial unit at Durango for the commercial demonstration of the process. The plant was completed about the 1st of July and has made short experimental runs.

The process briefly is to convert the zinc sulphides into sulphates, which are then soluble in water. The furnace work is estimated to take 12 hours, and this removal of the zinc from the complex ore renders the remainder carrying gold, silver, lead and copper readily available for the ordinary lead practice of the smelter at the existing furnace. The zinc will later be treated itself. The merit of the process is the conversion of the zinc in the complex ore from a liability to an asset, and the process will be world-wide in its application.

TAX ADMINISTRATION TROUBLES DISCUSSED

Tax Board Chairman Blames Tax Laws For Administrative Difficulties Encountered—Many Problems Need Attention

WHAT is the matter with the income tax unit?" Hon. William S. Moorhead, chairman of the tax simplification board, discussed this question at the meeting of the American Bar Association on August 31 at Minneapolis. He said answers to this question vary from a disclaimer that anything is the matter to the assertion on the part of an aggrieved taxpayer that the unit can never function satisfactorily. It was his opinion that the proximate cause of the difficulties with which the Bureau of Internal Revenue is now confronted is that in drafting and enacting tax legislation too little attention has been given to tax administration, and that the primary trouble is with the revenue acts, for the bureau is now administering the acts of 1917, 1918 and 1921.

From this general statement it may be assumed that the Treasury Department committee on law revision contemplates the recommendation of certain amendments to the law as soon as Congress meets in December, such amendments to be along lines designed to simplify the administration of its complex provisions which, although reasonable, have presented a herculean administrative task. Among the matters referred to by Mr. Moorhead as needing attention are the following:

1. The avenue of escape from taxation by investment in tax-exempt securities by citizens well able to contribute to the expense of the Government.

2. The proportionately higher rate of tax paid by earned incomes than that

paid by unearned incomes due to deductions that are available to persons whose income is derived from the ownership of property.

3. The inclusion in taxable income of profit realized from the sale of capital assets and the allowance as a deduction of the loss sustained on their sale.

4. The levying of the income tax at a time when it is not convenient for taxpayers to pay it.

5. The assessment of additional taxes at any time or times from a year to five years after the income is earned which compels taxpayers to maintain unproductive reservations of capital until the end of the period of limitations.

6. The imposition of penalties ruinous to the taxpayer where ignorance of the law should palliate his offense.

7. Thorough investigation for the purpose of expediting the audit of returns, the disposition of claims, the elimination of unnecessary steps and the fixing of responsibility.

8. The strict requirement that cases once closed be not reopened except in cases of fraud or gross error.

9. The widely scattered divisions and sections of the income tax unit because of totally inadequate housing facilities.

10. The advisability of decentralization whereby personal contact with taxpayers could be established and lengthy and unsatisfactory correspondence eliminated, to be determined by experiments in decentralization.

OIL SHALE—A COMPREHENSIVE SURVEY

IN this scientific, industrial epoch of world civilization, a supply of cheap, clean and efficient fuel is of paramount importance. Wood has long since been out of the race. Gas and water power are of local value only. Raw coal is costly, dirty, bulky and its production is productive of irritating labor controversies. The distillation, at the mines, of coal into its products—oil, gas and coke—is a feature of the near future. The ideal fuel, in general use, will be oil because of its high heat value for small bulk and the ease and convenience of handling. Already the majority of steamships are oil burning; large manufacturing plants and railroads are changing to oil as rapidly as they can make long-time contracts for fuel oil. Although the United States is the greatest oil producing nation on earth, yielding two-thirds of the world's supply, yet the domestic demand for oil, in every one of its forms, is greater than the supply. However, if to the well oil is added the oil that may be derived from shale, this country may justly be regarded, from the point of view of fuel, as the most favored nation on earth. Those nations which have no domestic supply of well oil but have large deposits of oil shale are especially interested in the development of the industry. These nations are Sweden, Estonia, Germany, Spain, France, Australia, Tasmania, Brazil and Canada. Fortunately our country has both well and shale oil in abundance and need have no cause for serious alarm over a general fuel shortage. This advantage will be of tremendous practical importance in the industrial development of the United States when, in the future, it comes into keener and more active competition with other nations.

In Scotland the oil shale industry is pursuing the even tenor of its way after nearly three-quarters of a century of steady production. The Scottish Oils, Ltd., is paying regular dividends and shows no sign of decadence. The conditions in Scotland are special and peculiar. The demand for oil in Great Britain is large; there is no local well oil supply; importation of oil is imperative; Great Britain depends, for her main supply, upon foreign production. Since the local price for oil and its derivatives is high, a local supply of oil from shale has a good field of operation and occupies a place supplementary to the general oil supply from abroad.

England contains extensive deposits of oil shale both in Dorsetshire on the Eng-

VICTOR C. ALDERSON
President, Colorado School of Mines



Dr. Victor C. Alderson

lish Channel and in Norfolk County in the north. The serious problem in connection with working these deposits is the removal of the excess of sulphur. Recently report has come that this problem has been solved. However, since similar claims have been made before and have proved to be unfounded, one is justified in withholding judgment until the claims are justified beyond a reasonable doubt. It is clear that the solution of this problem will mark a new era in the industrial life of Great Britain because a new and extensive supply of domestic oil will be opened. The English Oil Fields, Ltd., which controls the Norfolk field, has a great deposit of oil shale but the presence of sulphur is a practical handicap. Add to this the financial, technical and personal difficulties that have beset the company and one is not surprised that the deposit has not been worked successfully. General interest in the distillation of oil shale has been shown recently. English experimentors have been exceedingly

active and a number of worthy retorts are in operation in an experimental way. Besides those still in the blue-print stage, the following are being actively exploited, viz, the L. M. N. or Nielson process, the Flauson, Turner, Lamplough-Harper, Fusion, White, Freeman, Ironsides and the Hampton-Ryan. The wide ramification of Great Britain's interests all over the world give these inventors an extensive field of operation.

At the annual meeting of Scottish Oils, Ltd., held in Glasgow, after allowance for depreciation, a yearly profit of \$935,000 was reported. A regular dividend of 7 per cent and an extra of the same amount were declared on the preferred stock, leaving a balance of \$35,000 in the treasury for the coming year. The costs of production were reported to be lower than during the previous year, but the selling price of their products was also reduced. However, the total result was not unsatisfactory in the light of general trade depression in England and Scotland.

The announcement by Robert T. Birks, F. G. S., of London that he had perfected a commercial method of desulphurizing oil shale, at least of reducing the amount of sulphur to a negligible quantity, brings into prominence the oil shales of Dorset, England. These shales yield from 30 to 40 gallons of oil to the ton, are close to rail and water and lie near the surface so as to be cheaply mined. A company—the Kimmeridge Shale and Oil Company, Ltd.—has been formed to develop the property. This bed is known in England as the Kimmeridge shales. From this shale the first currency in England was made and called "coal money." The deposit has been known for centuries, but it could not be worked successfully on account of the excess of sulphur.

The oil shale deposits of Germany are generally smaller than in other countries but Germany is developing what little she has in the fixed determination to be free of foreign importation. The chief works—entire in every detail—are at Messel near Darmstadt. The deposit has been worked since 1885 by "Gewerkschaft Messel" and at present produces about 20,000 tons of shale annually.

Sweden is without well oil but has an abundance of shale available for the production of shale oil. Messrs. Bergh and Larson have, for the past year, been experimenting at the Gaswerke in Stockholm upon a new retort suitable for Swedish shales. The work is subsidized by the government and supervised by experts. The preliminary work at Stockholm has been so successful that the

*Address delivered to the National Oil Shale Conference, twenty-sixth annual convention, The American Mining Congress, Milwaukee, Wis., September 24-29, 1923.

government is building a commercial sized plant at Kinnekulle—the location of the oil shale fields. The oil shale resources are estimated, by official geological investigations, at 5,260 million tons.

It is a common belief that Spain has no oil shale deposits and no oil shale industry. Such is not the case. At Puerto-bello, 110 miles south of Madrid, is an oil shale bed 6 feet thick which yields 30 gallons to the ton. The daily capacity of the retorting plant is 100 tons, from which 3,500 gallons of oil are produced daily.

The oil shale deposits of Newfoundland are now known to be richer and more extensive than was formerly supposed. T. J. Thornburn reported to the Minister of Agriculture and Mines that the oil shales cover an area of 200 square miles. At Nichol'sville, at the mouth of the Upper Humber, the overburden is only 10 feet thick. The bore hole has gone through 500 feet of oil shale.

In 1922, 23,467 tons of oil shale were mined at Nownes, New South Wales, valued at \$300,000. Inasmuch as there is no local production of well oil and the price of the imported oil is high, the government is encouraging the development of the local oil shale industry.

AFRICA'S RICH SHALE

The oil shale of South Africa, according to E. H. Cunningham-Craig, is more like the English torbanite, from which oil was first produced, than it is like ordinary oil shale, and yields a very large amount of oil—up to 130 gallons to the ton. Tudor G. Trevor, inspector of mines at Pretoria, after an exhaustive investigation, reports that the Ermelo district is the richest and yields from 22 to 98 gallons, with a conservative average of 40 imperial gallons to the ton. The African Oil Corporation alone has proved up 7,000,000 tons of available shale. Tests on Transvaal oil shale by the Lamplough-Harper process in England gave 49.4 gallons to the ton. From the crude oil 40.34 per cent of gasoline was obtained. This retort is reported to be well adapted to the distillation of oil shale and satisfactory in the tests made.

The Southern Cross Motor Fuels Ltd. of Tasmania reports a new retort erected at their works at Latrobe from which the products of distillation are drawn off from three different compartments and separately refined. The company is planning extensive developments.

Since the sixteenth century the Tyrolese peasants have been known to distill, in crude iron kettles over a wood fire, the local shale, rich in fossil fish, and to obtain a tarry oil which they used to cure sores and wounds on live stock.

These curative effects were due to the antiseptic ichthyol derived from the oil shale, probably because of the excess of the fish remains in the shale. For this reason Professor Schroeter of Hamburg in 1890 gave the name "Ichthyol" to the product. By "ichthyol" is meant, in general, a water-soluble oil which is obtained by the distillation of bituminous shale, and subsequently sulphonation and neutralization with ammonia or soda. The ichthyol shale deposits of Germany, Switzerland and Italy should be regarded as a special type of oil shale deposits, not known elsewhere, and not to be compared with the great deposits of Estonia and the United States. They are found in thin beds, measured in inches rather than in feet, are rich in fossil fish remains, and are chiefly valuable for the ichthyol which may be derived from the crude oil.

IMPORTANCE IN ESTHONIA

Estonia possesses one of the greatest oil shale deposits in the world and counts it as her greatest undeveloped source of wealth. The shale itself lies near the surface, can be mined by steam shovel and yields oil of high quality and good quantity. The government is following a liberal policy in granting concessions that attract foreign capital. The shale is rich enough to be used raw in numerous ways aside from distillation to produce oil, e. g.—in gas works as raw fuel; in powdered form for burning cement; in locomotives and under stationary boilers; in private homes and factories; in fact, in almost any case where fuel is required. The quantity is virtually inexhaustible and will undoubtedly last for centuries.

DEPOSITS IN THE UNITED STATES

The oil shale deposits of Indiana have been carefully studied by Prof. John R. Reeves of the Indiana University. They form a northerly extension of the Kentucky deposit. They are of wide extent and yield less oil than the western deposits. However, this drawback may be overcome by favorable economic conditions such as cheap mining, abundant water supply and proximity to market. Professor Reeves estimates that 45,000,000 tons can be easily recovered, with still more that can be mined by underground methods.

The oil shale deposit in Kentucky surpasses that of any other eastern state. Although it yields less oil to the ton than western shales, yet its superior economic advantages—cheap mining, water supply, nearness to the labor market, efficient transportation and proximity to the centers of large population—all combine to make the deposit valuable and worthy of development.

In Nevada the outstanding figure is R. M. Catlin at Elko. Mr. Catlin is prob-

ably the most persistent, consistent and energetic figure in the oil shale field. For years he has been steadily at work experimenting on a commercial scale on a retort that will be a success. It looks as though his latest effort—a vertical retort with regulation of throughput, large capacity, control of heat, simple in design and operation—will be a pronounced success.

WESTERN RESOURCES

It is known to those familiar with the subject that California contains rich and extensive oil shale deposits. Unlike Indiana, Pennsylvania, Kentucky and Colorado, she has given no official recognition of the fact. Her state officials have made no move to examine her oil shale deposits, yet private individuals report a deposit at McKittrick, 40 miles west of Bakersfield, where the oil shale lies at the surface, with virtually no overburden whatever. The oil shale is fairly soft and can be mined by a steam shovel. It has been tested to a depth of 14 feet and shows a yield of from 30 to 95 gallons to the ton, with an average of 60 tons.

In Colorado the decision of the land office to resurvey nine townships in the DeBeque region first caused a wave of optimism. Then it was feared that since the new survey would show a considerable variation from the old, owners would be put to great expense for a resurvey and description of their holdings. However, after a careful consideration of the matter the land office assumed this additional burden and oil shale land owners are assured of correct description of their land as originally located, without expense to them. The main oil shale activity in Colorado recently has been the development of individual holdings through the annual assessment work. The retorts of the Monarch Oil Shale Company and the Index Company, both at DeBeque, are operating intermittently. The extent of the oil shale deposit in Colorado is so vast that it can be pictured only with difficulty, e. g., if 100 plants were in operation, each treating 2,000 tons of oil shale a day, it would require 800 years to exhaust the available supply now known to exist in Colorado.

Records of the Glenwood, Colo., land office show that up to November, 1922, 25,091.82 acres of oil shale land in Colorado had been patented; that final receivers' certificates had been issued on 15,887.88 acres, and that applications were pending on 6,850.80 acres. Thus a total of 47,830.50 acres of oil shale land in Colorado have been patented or are on the way to patent.

Prof. A. J. Franks, at the Colorado School of Mines, experimenting on crude

Colorado shale oil, from the Ginet plant of the Monarch Oil Shale Company at DeBeque, in the chemical laboratory, has obtained the following yields of the unrefined fractions expressed as percentages of the original crude oil by volume:

Product	(1) Per cent	(2) Per cent	Totals per cent
Gasoline, to 200° C.....	20	16	36
Kerosene, 200°-250° C.....	18	9	27
Fuel oil, 250°-320° C.....	27
Lubricating oil, 320°—dryness.....	22
Gas and coke (by difference).....	13	24	37
	100	..	100

(1) By fractional distillation.

(2) By cracking heavy oils.

He draws the following conclusions:

(a) Under present economic conditions, the greatest possibilities in oil shale seem to lie in the production of gasoline, kerosene, flotation oils and coke.

(b) High grade water-white gasoline can be produced from Colorado shale oil.

(c) This product can be made without sustaining an excessive refining loss if the proper method of refining is used.

(d) At least 31.7 per cent of the crude oil may be converted into this refined water-white gasoline if the heavy oils are cracked, but a greater percentage is very likely to be obtained.

(e) The gasoline made by cracking the heavy oils is superior to that obtained by fractional distillation of the crude oil.

The Union Oil Company of California has invested, up to the present time, a million dollars in Colorado oil shale land. The company's holdings approximate 20,000 acres. The richest stratum of commercial thickness yields 63.175 gallons of oil to the ton. The company is preparing to expend at once \$25,000 in surveys and development work.

The Ventura - Colorado Oil Company is making an auto road from the valley of Brush Creek, DeBeque, Colo., up Bridges Gulch to the top of the mesa. The road will be 2 miles long, will expose all the strata and make accessible the mesa region, which, up to the present time, could be reached only by trails.

The United States Geological Survey reports that on December 31, 1922, there were 284,880 producing oil wells in the country, producing on an average 5.7 barrels a day. The use of oil on steamships is increasing rapidly. A million barrels of oil a year are used for fuel in New York City alone. The use of fuel oil is steadily encroaching upon the use of raw coal because of its economy, cleanliness, ease of handling and freedom from labor troubles in securing a supply. The Singer building, the Metropolitan Life, the Equitable, the Knickerbocker and other large buildings and manufacturing plants have already turned to oil as a fuel. The discovery of oil at Signal Hill, Huntington Beach and Santa Fe Springs in southern California has un-

settled the oil market, far and wide. but economic laws, which can not safely be trifled with, will soon bring about equilibrium.

EXTENT OF RESOURCES

According to Capt. E. de Hautpick, the noted European oil geologist, the world's production of oil to date has been distributed approximately as follows:

North America.....	64.31 per cent
Europe	30.60 per cent
Asia and Oceania.....	4.42 per cent
South America.....	.43 per cent
Africa40 per cent

The most serious difficulty to be overcome in the distillation of oil shale is that heat penetrates the interior of a piece of oil shale very slowly. Thus, in the Scotch retorts, the time for a piece of shale the size of one's fist to pass through and to be thoroughly distilled is 24 hours. For this reason the daily throughput of a retort is only four tons. A large daily tonnage in Scotch retorts, therefore, requires a large number of retorts at a heavy initial expense. A colossal blunder has been made by early experimentors in assuming that, because the Scotch type of retort has been successful in treating oil shale in Scotland, it would be equally successful in treating any kind of oil shale in any part of the world. Much money has been lost by this faulty reasoning. Shales vary greatly in their composition, their yield of oil and the necessary commercial treatment. The Scotch type of retort will undoubtedly be successful if the shale yields only 20 or 25 gallons and 50 pounds of ammonium sulphate to the ton, but it will fail on shale that yields 40 gallons to the ton, produces no commercial amount of ammonium sulphate and is situated in a region where water is scarce. The vertical type of retort, based upon the general plan of the Scotch but modified to increase throughput, is being used in Estonia and is of German design and construction. This type is represented in the United States by the Newberry, the Catlin and the Day. The horizontal type, designed to use smaller sized bits of shale, with large daily capacity, is designed on the plan of a horizontal revolving cylinder. This type is well represented by the Neilson in England and the Ginet and Brown in this country. It can not be said that any single retort is "the best." A successful retort must be adapted to the shale to be treated. There may be, and very likely will be, a number of successful oil shale retorts, each adapted to a particular deposit, successful in one place, a failure in another.

In order to get a proper conception of the oil shale industry one must have vision, constructive imagination and an

appreciation of the value of fuel in the industrial life of the future. From this broad point of view it is seen that oil will be the main fuel of the future, that its production from wells is, and necessarily will be in the future, uncertain and erratic, but that oil from shale will be definite and certain and will be produced all over the world. In the future, then, the oil shale industry is destined to be a great, all embracing industry, basal in its nature and fundamental to all civilization.

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The Public Printer circulates a pamphlet of the Department of Commerce of some four pages of fine type, in which are listed the publications of that department which are now available for distribution.

ERROR

The Mining Congress Journal wishes to correct an error in its September number. The article on Practical Problems in Extracting Oil from Shale is ascribed to Dr. Victor C. Alderson. This paper is by Mr. Robert J. G. Stewart and Mr. John Trenhard.

A SILVER EXPORT ASSOCIATION

Reno Conference of Silver Producers Endorses Formation of a Silver Export Association and Discusses Many Phases of the Silver Problem

SILVER producers of the United States and the Silver Commission of the United States Senate which is investigating their problems are to be congratulated upon the success of the Reno conference. A crowded attendance, intense interest and vigorous discussion of silver problems marked this meeting.

Resolutions of great value were introduced and passed. These resolutions provided:

(1) For the organization of a silver export association under the Webb-Fomerene Act;

(2) To press the issue against the Treasury Department regarding the cancellation of allocations for subsidiary coinage;

(3) To urge the restoration of lead bullion rates from western smelters to Atlantic seaboard;

(4) The formation of a permanent committee headed by W. Mont Ferry, of Salt Lake City, which is to meet before November 15;

(5) Expressions of sincere appreciation for the services rendered by the senate gold and silver commission.

The meeting, held September 4 to 8, was attended by nearly 200 interested delegates made up of members of the silver senatorial commission, including Senators Walsh, Pittman, Oddie and Gooding. Senator Oddie, chairman of the commission opened the session on Tuesday morning, presenting Governor Scrugham of Nevada, who made the opening address. Senator Oddie then made a most interesting talk on the work which had been done by the silver commission.

He discussed first the work of Senator Pittman as vice-chairman of the commission, having charge of the controversy with the Treasury Department in the investigation of the cancellation of the allocation of silver for subsidiary coin-

age. The splendid data which have been gathered by the commission under the direction of H. N. Lawrie, assistant to the commission, was laid before the conference in Senator Oddie's talk. These data covered the falling off in the world's consumption of silver and the demonetizing of silver coinage in the countries of Europe and South America. Senator Oddie urged the need for an organization that would make possible the restoration of the silver industry.

Senator Pittman addressed the meeting with a vigorous statement of the issues against the Treasury Department on the disputed provision of purchases under the Pittman act.

"If we are successful in having our views sustained in the matter of allocation of silver purchases under the provisions of the Pittman act we will at least have been a great aid to the silver producers," Senator Pittman said in opening. "It would mean the continuation of silver purchases at \$1 an ounce for two and possibly three months. Our work has just started. The commission has accumulated a vast store of information, and much credit is due to Senator Oddie for his persistent work.

"The producers themselves, however, must make some strong effort. They must do something for their own industry or the silver industry will die out in this country. It cannot continue in the United States under existing conditions, where the cost of producing silver is 49 percent more than it was in 1919. There is no profit in mining silver at existing prices. Of course it will be produced as a by-product, but not to the extent of recent years."

Senator Pittman then devoted some time to the history of the Pittman act, declaring that the bill was introduced at the behest of Great Britain, so it could supply India with silver. "Every dollar at a dollar an ounce was paid for out of

the British Treasury," he said. "It cost the United States nothing. The silver producers received no bonus."

Senator Pittman concluded his statement with the following forceful expression:

"If this opinion, which has been under consideration for five weeks, a fact alone that makes it apparent the comptroller general is making a careful study of our protest, then I believe the silver producers of the United States should file an action of mandamus in the district court of the District of Columbia and compel the Treasury Department to fulfill its ministerial duties."

Senator Walsh of Montana, who has just returned from a trip to the Orient, told of the basic use of silver in the exchange situation in the Far East. He was most hopeful in the statement that a silver export association under the Webb-Fomerene act could achieve substantial results.

He stated: "One important matter and one of great interest to this country is that, whatever monetary system there is in China, silver is the medium of exchange. Over there each and every trade or sale is completed at the moment. There is no such thing as a farmer sending to a store for a pair of shoes or sandals, then telling the merchant to charge it. With this system in vogue a dollar's worth of silver has to do ten times the duty that it would in this country. It is on the move all the time. All larger accounts are settled by silver payments in the form of sycee. A sycee is an ingot of silver shaped somewhat like a shoe. It bears in the center of the dish-shaped portion the stamp of the Chinese silver metal workers' guild. Without that stamp the sycee would not pass. But bearing it, it is taken without question as to value and fineness. Strange to say, the stamp of the Chinese government on a piece of silver or other coin



has no value whatever. The stamp of the guild is never questioned and it must be there. Each sycee contains 52 tael and a tael is about 72 cents.

"The method of commerce is that at that season when the merchant starts out into the country to trade or to buy the crop he first arranges his credit at the bank. That is about the only credit system that ever reaches the producer and only in this way. After the merchant has arranged credit he is entitled to withdraw so many sycee. These he loads on his junk or horses, if going by land, and pays for each transaction as he goes along. That sycee when it reaches the producer is often times horded. It never goes to a bank as deposit by the Chinese farmers or other producers. Under such a condition and with 400,000 population to trade with, the Chinese trade is worth looking after and, notwithstanding its drawbacks, is expanding. With the conditions of the country as I have outlined, there are great possibilities in China. If conditions were brought about that an average of increase of trade amounted to one sycee to each Chinaman it would keep the silver mines of the United States working for a long period of time."

C. F. Kelley, president of the Anaconda Copper Mining Company, on the second day of the session expressed his views on the possibilities of the silver association. In part he said:

"It would be unfair to tell you that it is only a problem of our getting together and forming an export association. It would be a mistake to preach to the silver miner that by the simple act of organization he can control the silver market. It will be easy to organize, but when it comes to the matter of operation there are tremendous business problems to overcome.

"The matter of organization has three important aspects, namely: The legal, the financial and the matter of securing a majority of the world's silver production to join with us. As a matter of enlightenment let me cite some of the experiences of the copper export association of which I happen to be one of the organizers and as well a director.

"Under the terms of the Webb-Pomerene act it is a crime to affect domestic prices either directly or indirectly by monopoly. Immediately comes the question of how are you going to help the foreign price without affecting the domestic price? For example, the directors and officers of the Copper Export Association were recently threatened with an indictment for acting in restraint of

trade, and only escaped prosecution by proving that in spite of the efforts of the organization the price of the red metal had not increased, but had actually declined. It is a question whether you can organize under the Webb-Pomerene act unless you openly avow the intention of desiring to regulate the domestic price. Then what are you going to do? Will you have two prices—one foreign and one domestic?"

Mr. Kelley then offered the suggestion that members of the silver commission who had devoted so much thought to this problem and because of their closeness to legislative situations might be able to recommend such changes in the Webb-Pomerene act as would permit the organization of the silver association as would fully comply with the requirements of the law.

A large financial organization would be necessitated by any enormous holdings of silver in such an association and this would also necessitate the cooperation of a majority of the world's silver producers.

"But don't think I am a pessimist," added Mr. Kelley, "for I am an optimist. I only want you to see the dark side so that something constructive may be accomplished. There is much that a silver export association can do. It can collect information which will be of vast use to the producers; it can coordinate the marketing of silver; it can eliminate the charge made for shipping silver from New York to London and thence to Bombay when a great part of it goes directly from San Francisco to the Orient.

"I believe it is a mistake if our deliberations assume a tone of challenge to the British banking interests. It is true that the miner never has had a voice in the fixing of the price of his product. Ethically and economically, I believe this practice to be wrong. But how are we going to change it? From time immemorial the British through a control of financial and diplomatic channels have controlled the Oriental silver market, the determining factor in the fixing of the price of the metal, and to say that by putting all of the silver in a bag and not allowing them to have any except at our price is nonsense. My counsel, my advice, is to form a common selling agency, if such an action is feasible; meet the buyer with a united front, take advantage of orderly marketing; cooperate to restore silver to wider use and feel our way out of the present difficult situation into a future of greater certainty."

Senator Gooding of Idaho expressed himself as being strongly in favor of the organization of an export association, stating that only those industries which were well organized had weathered the business conditions of the last five years. He contrasted the organization in manufacturing industries with the organization effort in mining and agriculture and urged the necessity of closer cooperation to cope with present conditions.

W. Mont Ferry, of Salt Lake City, chairman of the silver association, was appointed chairman of a committee, whose other members are Henry M. Rives, secretary of the Nevada Mine Operators' Association; W. I. Snyder, of Salt Lake City, and Alfred Harrell, editor of Bakersfield Californian, and the head of the California Rand, one of the largest silver mines in the country, for further consideration of plans for a silver export association and to make recommendations for its personnel.

The appointment of the men to be named by Mr. Ferry is an important task. This committee of fifteen, as provided for in the resolution is to be made of men whom the committee determines to be able to give the most intelligent and farsighted direction. They are to be chosen without regard to point of residence but solely because of their knowledge and ability in silver matters.

The resolutions passed were as follows:

Resolution Offered by Senator Key Pittman

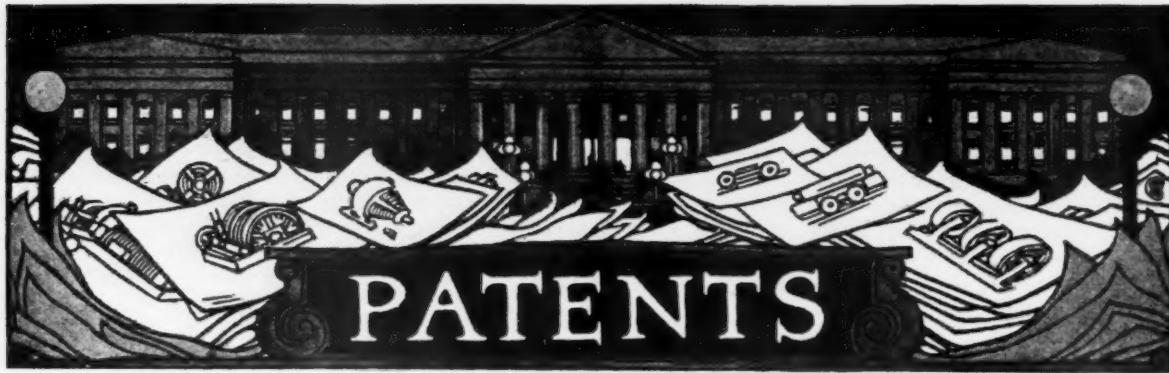
Resolved, That it is the sense of this convention of silver producers, assembled at Reno, Nevada, this 4th day of September, A. D., 1923, that:

1. A Silver Export Association be organized under the Webb-Pomerene act and under such amendments to such act as may be had.

2. That a committee of 15 members representative of the silver mining industry of the United States and such other countries as desire to participate, be appointed by the chair within two weeks from date, which committee shall be authorized and directed to proceed immediately to the consideration, formulation and organization of such Export Association.

3. That said committee shall have power to appoint a subcommittee or subcommittees to conduct such work and to act subject to the approval of the committee.

4. That the committee shall from time to time, as may be advisable, report their action to the members who now constitute, or who may hereafter constitute, the membership of this body, or any body, arising therefrom.



CONDUCTED BY JOHN BOYLE, JR.

1,457,384—*W. R. Miller*, Park Place, Pa., June 5, 1923.

BEARING BOX FOR MINE CARS, provided with pockets in which lubricant-applying brushes may be placed, the said brushes applying the lubricant to the side portions of the axle. The lubricating oil may be fed through a passage formed in the supporting bar and dropped down onto a partition above the brush, the partition being provided with a groove so that the oil will be fed onto the brush and absorbed by this brush.

1,457,479—*E. R. Walker*, Los Angeles, Calif., June 5, 1923.

METHOD OF INCREASING THE YIELD OF OIL WELLS, consisting of closing the top of a central well, pumping air into said well, producing combustion therein, and pumping the surrounding wells.

1,457,680—*W. A. Whitaker*, New York, N. Y., June 5, 1923.

FLOTATION PROCESS FOR OXIDIZED ORES which consists in forming on the metal-containing particles, by chemical action, a film of an organic compound of the metal, this film having property of attaching to a gas bubble and difficulty soluble in water.

1,457,794—*W. E. Piper*, New Canaan, Conn., June 5, 1923, assigned to the Dorr Company.

SETTLING APPARATUS provided with a rotating scraper which is applicable to and capable of functioning in a substantially square tank to move solids therein, substantially as similar scrapers are employed in circular tanks. The invention depends upon the use of auxiliary arms which rotate with the scraper arms, moving over the spaces which are outside the circle and automatically swinging to inoperative position where that circle is tangent with the sides of the tank.

1,458,060—*C. W. Hurl*, Nanty Glo, Pa., June 5, 1923, assigned to Miners' Supply and Equipment Co.

MINE ALARM INSTRUMENT. If the roof starts to sag or collapse, an arm will be depressed and elevate the toe end of a bell crank lever and actuate a tapper, causing a gong to sound.

1,458,299—*A. Jacqueline*, Paris, France, June 12, 1923.

GRID comprising a continuous metal wire wound around the frame and then stretched, the upper strands of the wire being arranged in a certain number of parallel planes and the lower strands being connected in bundles of two or more.

1,460,073, 1,460,075-6 and 1,460,077—

C. S. Oldroyd, Cincinnati, Ohio, June 26, 1923.

MINING MACHINE in which the cutting means may be made to cut kerfs; in the wall horizontally along the floor level and at other levels as high as the machine can reach; relatively and parallel to the general forward course of the machine; obliquely toward the right and left within a certain range; annularly around a horizontal axis and in a variety of curves.

1,460,074—Same.

MOTOR-DRIVEN TRUCK for coal-cutting machines of the type above described.

1,460,452—*H. F. Snamiska*, Bremer-ton, Wash., July 3, 1923.

PRECIOUS METALS CONCENTRATOR comprising a receiving chute, a sloping sieve thereunder, a dividing platform under said sieve, spaced pivoted flumes at either side of said platform adapted to be rocked to discharge either inwardly or outwardly, riffles in said flumes and means for rocking said flumes.

1,460,696—*F. S. Barks*, July 3, 1923, St. Louis, Mo., assigned to Lincoln Steel and Forge Company.

MINE CAR having channel iron frames extending across the car above the axles, and a flat bar extending longitudinally of the car and being bent downwardly and upwardly to form a journal box-container and secured to said channels at the sides of the container forming portion.

1,460,885—*T. L. Campbell*, Berlin, Pa., July 3, 1923.

MINE CAR SKID.

1,461,069—*T. Richards*, Portage, Pa., July 10, 1923.

RAILROAD MINE TIE AND RAIL FAS-TENER.

1,461,372—*W. E. Trent*, Washington, D. C., July 10, 1923, assigned to Trent Process Corporation.

PROCESS OF TREATING ORES in which fuel and fluxed ore are introduced to the treating chamber and heated, whereupon the charge becomes viscous or sticky so that when projected with suitable velocity upon a surface the charge will adhere thereto and build up a sintered and agglomerated mass.

1,461,513—*F. F. Brasche*, Edwardsville, Ill., July 10, 1923.

AUTOMATIC MINE CAR CAGER.

1,461,647—*A. E. Bookwalter*, Cour-d'Alene, Idaho, July 10, 1923.

MINER'S KNIFE having a hole to receive a fuse to slit.

1,459,167—*R. V. Smith*, Salt Lake City, June 19, 1923, assigned to Eureka Metallurgical Company.

STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCULATION, ETC., REQUIRED BY THE ACT OF CONGRESS OF AUGUST 24, 1912,

Of **THE MINING CONGRESS JOURNAL**, published monthly at Washington, D. C., for October 1, 1923.
City of Washington,
District of Columbia, ss.:

Before me, a Notary Public, in and for the state and county aforesaid, personally appeared R. S. Mowatt, who, having been duly sworn according to law, deposes and says that she is the assistant business manager of the **MINING CONGRESS JOURNAL**, and that the following is, to the best of her knowledge and belief, a true statement of the ownership, management (and if a daily paper, the circulation), etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, embodied in Section 443, Postal Laws and Regulations, printed on the reverse side of this form, to wit:

1. That the names and addresses of the publisher, editor, and business managers are:

Name of Publisher—The American Mining Congress.

Postoffice address—Washington, D. C.

Editor—J. F. Callbreath.

Business Manager—E. R. Coombes.

2. That the owners are (give names and addresses of individual owners, or, if a corporation, give its name and the names and addresses of stockholders owning or holding 1 percent or more of the total amount of stock): The American Mining Congress—a corporation, not for profit. No stockholders.

3. That the known bondholders, mortgagees, and other security holders owning or holding 1 percent or more of total amount of bonds, mortgages, or other securities are (if there are none, so state): None.

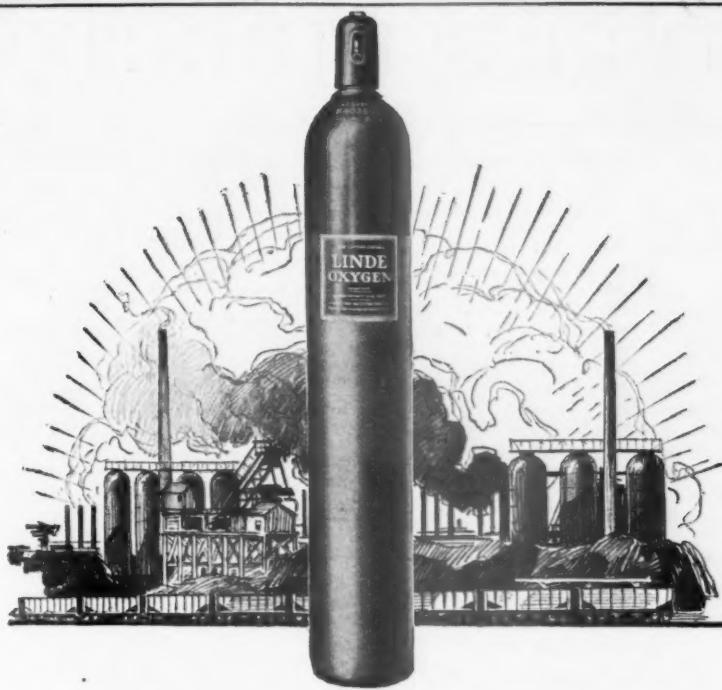
R. S. MOWATT,

Assistant Business Manager.

Sworn to and subscribed before me this 24th day of September, 1923.

(Seal.) THOMAS C. WILLIS.

(My commission expires Jan. 10, 1927.)



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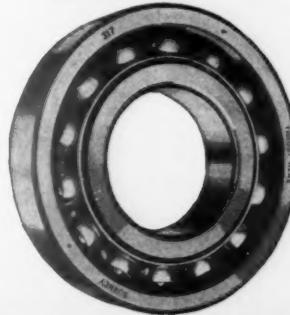
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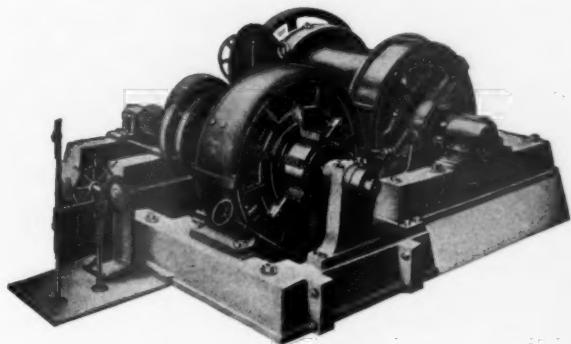
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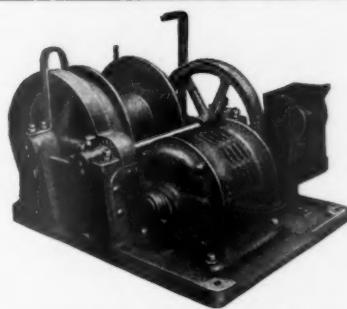
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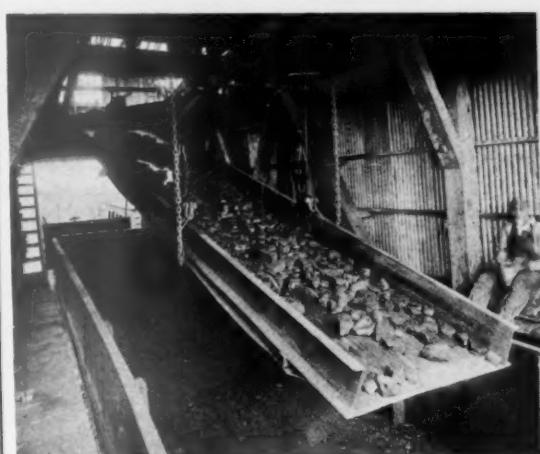
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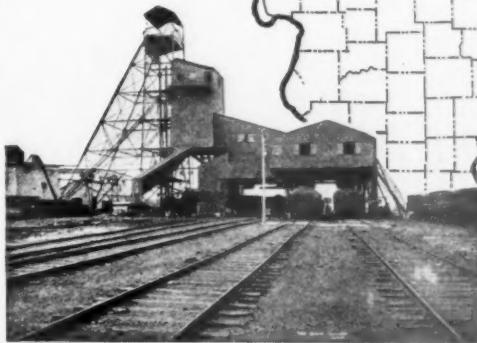
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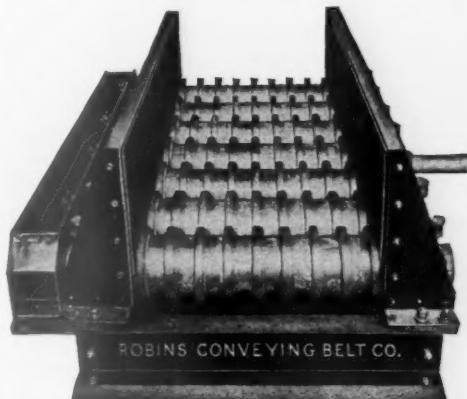
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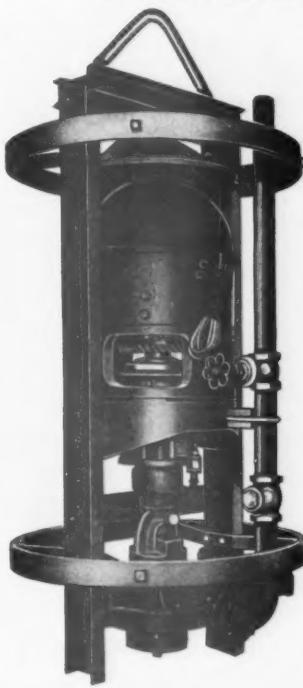
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